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DR. DANIELSON'S
COUNSELOR
WITH
RECIPES:
A PRACTICAL AND
TRUSTY GUIDE FOR THE FAMILY,
AND
A Suggestive Hand-Book for the Physician.

BY

LC?

J. EDWIN DANIELSON, M.D.,

REGULAR GRADUATE, AND HOLDING OFFICIAL POSITIONS, ACTIVE MEMBERSHIP AND
HONORARY CONNECTION WITH MEDICAL, SURGICAL AND THERAPEUTICAL
SOCIETIES IN THE CITY AND STATE OF NEW YORK, ETC.

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PREFACE.

THE majority of physicians, we believe, are prejudiced against books which popularize medicine; and why, we fail to understand. They cannot reasonably object to every man, woman, and child having a correct, rather than a fanciful knowledge of physiology, of the operations and functions of the organs of their own bodies—in fact, of the life within themselves. Most doctors regret not having at an earlier period in their own lives possessed such information. Any opposition to the dissemination of the facts and principles of hygiene will be futile, for the newspaper press has undertaken this form of education, and the avidity with which health articles are copied and recopied shows a desire for such. If the want is not met by the profession, who should be best qualified for the work, it will be supplied by the intelligent outside its ranks. At the present time this is the case to a great extent, and the whole subject is discussed ably and wisely by the laity. An exception may be noted in some of the largest publishing-houses, who are issuing small works in series on medical topics written by medical men.

To talk of the "mystery of medicine" in this age is simply "foolishness," and it is equally out of place to assume the possession of scientific knowledge far beyond the comprehension of the masses. If a physician knows exactly the condition of his patient, and the causes and consequences of his difficulties, he can explain them so as to be understood by the least intelligent.

There exists altogether too much ignorance on medical matters. People act, if they do not speak, as though it was not necessary to use reason and common-sense in medicine the same as in other matters. This ignorance compels a multiplication of words by the doctor in giving instructions; and his successes are as often thwarted by some imprudence which he failed to forbid or proscribe, as from disregarding instructions which a knowledge of physiology would have averted. It is a sad mistake to believe that popular medicine injures a physician financially or otherwise. The informed will look after minor matters, it is true, and perhaps they will do this in any event; but when skill is wanted they call early, seldom arouse one at unseasonable hours, make the visit as cheer-

ful as can be under the circumstances, relieve one of the necessity of looking after minor details, appreciate the services rendered, pay for it promptly, and enhance one's reputation by assisting in speeding the cure. The only one to suffer is the pretender, the impostor. A moment's reflection will convince any one of the fact. Persons who are sharp in bargains, shrewd in business, and sagacious in most of the concerns of life, have little knowledge of the principles of medical practice, and seldom scrutinize or criticise the man into whose keeping their lives are entrusted,—his methods, or their progress. Among these, a little learning would be dangerous to the pretensions of the charlatan. We would not believe that this prejudice is founded upon any such fears as here depicted. If it is, we would gladly hasten the day of more complete knowledge. We suggest that in the education of the masses lies an easy solution to the problem of ridding the country of empirics, now endeavored to be accomplished by legal enactment.

Perhaps physicians are prejudiced against books which popularize medicine, from a belief that too much medicine would be taken, and disease be increased instead of lessened. This ground is hardly tenable. The selfish would welcome the more extensive harvest; but there is no danger of immediate results one way or the other. Few have any idea of the hogsheds and tons of patent medicines taken; and we doubt if there was ever more medicine swallowed than at the present time, and yet the average duration of life is increasing. Perhaps one has little to do with the other, but it is a good illustration of overdosing. Such books generally advise but few remedies, and these not injurious. There are exceptions, but they are few.

Again, such works teach physiology and hygiene, and if the instructions are followed, disease is prevented. Besides, a person using one of these recipes watches its effects much more closely than that received from a physician, and if ineffective throws it aside, and uses another if he chooses—a liberty which he should take, but does not care to take with the doctor's remedy.

Another objection to the education of the people in the rudiments of medicine is, that when they employ a physician they will not follow his advice. This argument is theoretical only, and we have already noticed its practical effects to be quite the contrary. If a patient does not follow instructions, the responsibility and risk are his own. It is not so certain but he may know of a better way than the course recommended. Physicians and nurses we know often disagree, but this is seldom the case when the nurse is educated. A common-sense view may differ from the scientific opinion. Medicine needs both the common-sense and the scientific; but when a seeming conflict does come, let the so-called scienti-

fic give way to the other, that no mistake may happen, and no injury.

Such prejudices compel the mother with her first babe to seek the physician for answers to the thousand and one questions ever rising in her mind concerning its care, its welfare, and its physical training. They compel the timid to suffer, which they would rather do than consult a doctor for information on sexual matters. They would, if the people would concur, foster such ignorance that health would be continually jeopardized. Such sentiments do not accord with that philosophy which declares, "I am a man, and nothing which affects humanity should be a matter of indifference to me."

There are serious objections to some "popular medical works" on the ground of immorality. The most dangerous book to public morality, we believe, is one professing to be written by a physician, who advocates universal lust and license as a matter of science and physiology. This book expresses boldly the carefully whispered opinions of some medical men, who, immoral themselves, advise the readers, male and even female, to practise immorality, just as doctors who freely indulge in intoxicating drinks also freely prescribe them for their patients. All this is fearfully wrong, and fearfully mischievous, as any one can see who looks beneath the varnished surface of respectable society, as can be shown from the highest authority, and as a deduction of physiological science; for nothing which is not contrary to nature can be opposed to a true morality.

In the pages which follow an effort is made to avoid all objectionable features. General terms are as far as possible omitted. To advise patients to use tonics, leaving the selection and administration to their untutored judgment, is wrong. When such occur, it better be interpreted, Consult a physician. To the discretion, however, is left either the size of the dose or frequency of dispensing it. These must always be decided by the urgency and emergency. The doctor is himself often puzzled in this matter. Each disease is treated by itself, repeating the recipes when proper, and taking the chances of being considered verbose.

PREFACE TO SECOND EDITION.

A second edition required within a few months of the appearance of the first adds another to the many gratifying evidences that the publication has merit, and is meeting a want of the household and of the public. The book does not, nor is it intended to, usurp or abridge the office of the physician. There are communities entirely without and beyond medical assistance; others with doctors, it is true, but those lacking in many necessary qualifications, and others still, but few we hope, where the medical adviser is fastened in the rut of routine, or forgetting that in this science continual study is necessary, even though his career span the years of a half century, he is followed by unsucccess. In such this work is finding welcome hands and hearts. Many only learn that most diseases are preventable through some such medium as this. It is saddening to think that to thousands such knowledge will only come through the experiences and afflictions of sickness and suffering.

With the many who have recovered health or are now convalescing, through the means herein recommended, we rejoice. We are also pleased to learn, that in not a few instances, our chapters have led readers to improve the sanitary arrangements of their dwellings and its surroundings. That the former edition should reach almost every state in this country, also Canada, Great Britain and Australia, is gratifying, but more flattering is the fact that so many volumes found place in the libraries of physicians.

The criticism has, in every instance, been favorable. Some idea of its character may be gleaned from the following:

"I have examined a copy of the 'COUNSELOR' and find it contains very many interesting and valuable topics, very pleasantly and accurately developed. It is a useful book and must be productive of great good in the family circle. I am happy to add it to my library."—GEORGE H. HARDIN, Justice Supreme Court, N. Y.

"The COUNSELOR is to me a continued surprise. Curious to see what the book contained I at first turned its pages with that prejudice against 'doctor books' which many of us have cherished. Soon curiosity and prejudice gave way to an absorbing interest. The first part is worth everything, if there were not a page on medical treatment following. You avoid technical terms and designate quantities by name and not by characters. The exhaustive range of subjects is treated with wonderful conciseness and clearness, and the whole book gives evidence of long, patient and painstaking toil. I expect to use it frequently as a book of reference."

—REV. N. R. EVERTS, Pastor Baptist Church, Sing Sing, N. Y.

"I have examined with some care the 'COUNSELOR' and am impressed with the plain common sense of its statements and the wide range of reading and observation it discloses. Many chapters are of very great importance and should be placed in the hands of youth. Others are of equal value to the more mature. Of the advice in the work I have formed a very high estimate."—O. H. TIFANY, D. D., Pastor St. Pauls M. E. Church, N. Y.

"Your new book has been read with much interest. It impresses me as a most valuable book, and useful in every family, etc."—ALBERT DANKER, D. D., "Grace Rectory," Watertown, N. Y.

"Unlike many medical works the COUNSELOR is pure and elevating in its morals, and wise and practical in the application of its counsels. It can but be a helper in homes following its directions."—REV. J. V. FERGUSON, Pastor M. E. Church, Mohawk, N. Y.

"Each time that I have opened this work I have discovered something new and useful, for the doctor's easy style of treating medical subjects is full of profitable suggestions, particularly in the treatment of disease. It encourages domestic practice, and unless the physician is up to its recommendations and prescriptions, the family will not need his services. It is a work that improves upon acquaintance, and no practitioner can afford to be without *this 'counselor,'* if he would retain and increase his popularity in medical practice."—PROF. ORIN DAVIS, Attica, N. Y.

'Your COUNSELOR is just the book to go into every family in the land. It would save them ten times the cost in preventing sickness.'—R. HAMILTON, M. D., Saratoga Springs, N. Y.

"As a trusty guide for the family, in our estimation, it is unequalled. The treatment is safe, simple and effective. The doctor is a strong advocate of pleasant and pure medicines. New ideas crop out continually."— *Medical Tribune*.

"There are many books called 'Family Practice,' which are only advertisements of some doctor, contain only general instructions, if any, and no recipes. 'They contain a great deal but NOTHING AFTER ALL.' In the COUNSELOR every disease is accurately defined, and a successful treatment given to each. There are no secrets, no mysteries, and the language is familiar to all. The laws of our physical nature are concisely stated; their observance resulting in health and happiness through a long life."— *Journal*.

We might add many flattering testimonials from newspapers and individuals, but we have already overdone the matter.

Grateful and thankful for the privilege of being the humble instrument of alleviating, to some extent, the sufferings of my fellow-beings, I am, respectfully, your obedient servant,

THE AUTHOR.

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MEDICAL DICTIONARY.

A BATEMENT. Decrease of fever.

Abdomen. The belly.

Abnormal. Unnatural, irregular.

Abscess. A collection of purulent matter.

Absorption, absorptive. Taking up or soaking up.

Accephalous. Without a head.

Acid. Sour; a substance which neutralizes alkalis.

Adhesive strips, adhesive plaster. Cloth or other material coated on one side with sticking composition.

Afterbirth. A body attached to the womb and by a cord to the child, supplying blood and nourishment before birth.

Albumen, albuminous. One of the elements of the body that hardens with heat. The white of an egg.

Aliment, alimentary. Food. The alimentary canal begins with the mouth and ends with the rectum.

Alkali. Caustic; a substance which neutralizes acids.

Alterative. Altering or purifying the blood.

Alternating. One medicine following another after an interval.

Altruism. Regard for another.

Alveoli. The bony sockets to the teeth.

Alvine. Pertaining to the intestines.

Anæmia. Deficiency in blood. The want of red corpuscles gives the pallid appearance to the skin.

Anæsthesia. Deprived of sensation.

Anaphrodisiac. An agent to blunt sexual appetite.

Anastomosis. Communication between blood-vessels.

Anatomy. A description of the organs of the body.

Anodyne. Relieving pain.

Antacid. Neutralizing acid.

Antibillous. A term applied to active cathartics.

Antidote. Medicines counteracting poisons and rendering them inert.

Anti-malarial. Preventing an attack of malaria.

Antiperiodic. Breaking up periodicity or appearance at regular intervals.

Antiperistaltic. Forcing the contents of the bowels backward into the stomach.

Antiseptic. Destroying poison.

Antispasmodic. Stopping spasms.

Antrum. See page 408.

Anus. The lower opening of the bowel.

Aorta. A large artery arising from the heart.

Aperient. A gentle laxative or purge.

Aphonia. Loss of voice.

Aphthous. Affected with aphthæ; a curd-like covered sore.

Areola, areolar. The connecting tissue between fibres and vessels. Pertaining to areolæ.

Artery. A blood-vessel which (with one exception) carries the red blood.

Asphyxia. Suspended animation. See page 477.

Aspirator. A pumping apparatus with a long, fine, sharp-pointed tube for removing fluids from internal parts.

Assimilation. The act of transforming the food into the various parts of the body.

Asthenic. Debilitated.

Atrophy, atrophied. Wasting away. Withered.

Auscultation. Discovering chest diseases by listening.

Axillary. Arising from a depression between the stem and leaf-stock.

BANDAGE. A long piece of cloth, of variable width, used for binding.

Benumb. To deprive of sensibility.

Bicuspid teeth. The fourth and fifth teeth from the centre of the lips.

Bile, bilious. A fluid secreted by the liver. Pertaining to bile: a peculiar temperament.

Blastema. A germ.

Bloodletting. Opening a vein in the arm to let out blood.

Bolus. A large pill or anything of its size.

Bongie. A flexible instrument for dilating the urethra.

Bronchial tubes. Vessels carrying air to the lungs. **Bronchi.**

Bronchus, bronchi. The lower air-passage.

Buccal walls. Inner surface of the cheeks.

CACOPLASM. Bad or low form of organization.

Cæcum. A part of the intestines emptying into the colon; the blind gut.

Calcareous. Of the nature of lime.

Calculus, calculous. A stony formation. Pertaining to calculus.

Capillary. Blood-vessels, hair-like in size.

Capsule. A covering or case.

Carbon. One of the elementary bodies or metalloids.

Cardiac. Pertaining to the heart.

Carnivora. Flesh-eating animals.

Cartilage, cartilaginous. A white, elastic, solid part of the body. **Gristle.** **Gristly.**

Caseous. Like cheese.

Castration. Removing the testicles.

Catamenial. Relating to the monthly flow.

Cathartics. Agents that produce evacuation of the bowels.

Catheter. A tube with an eyelet near its end, used for conveying fluids. See illustrations, pages 529 and 531.

Cauterics. Corrosive or burning substances.

Celibate. A bachelor.

Cell. The smallest particle of living matter. The body and all of its parts are made up of cells.

Cellular tissue. The tissue uniting all parts of the body.

Cerebellum. The small or lower brain.

Cerebrum. The great or upper brain.

Cerumen, ceruminous. Ear-wax. Waxy.

Cholesterine. A crystallizable substance formed in the bile.

Chronic. Long-standing, seated.

Chyle. The milky fluid formed from digested food, and which is emptied directly into the blood-vessels.

Chyme. See page 38.

Cicatrix, cicatrices. The scar from a wound. **Scars.**

Circulation. The flow of blood from the heart to the extremities and back again.

Circumcision. See page 568.

Clonic. Rigid, with occasional relaxation of the muscles.

Coagulate. To harden, as the white of an egg, by boiling.

Coitus. Sexual connection.

Collapsus. Complete prostration or inaction.

Colliquative. Exhaustive.

Coma. Comatose, profound sleep. See page 344.

Conception. Being with child in the womb.

Congenital. Dating from birth.

Congestion. The flow of blood to a part. **Stagnant circulation.**

Conjunctiva. The membrane covering the ball of the eye and inner surface of the eyelids.

Contagion. Communication of disease from one to another by touch, food, drink, or the atmosphere.

Continence. Abstinence from sexual congress.

Convalesce, convalescence. To recover health and strength. **Period of recovery.**

Convulsions. Spasms.

Cornea. The tough transparent membrane in the front of the eyeball.

Corpuscle. A minute body. A particle.

Corroborant. A remedy which gives strength; tonic.

Corrosive. Burning.

Cortical. The bark or external portion.
Oostiveness. Irregular and delayed motion of the bowels. Constipation.
Counter-irritation. Irritating one part to relieve irritation in another.
Cramps. Sudden and painful contractions of muscles.
Cranial. Belonging to the skull.
Crisis. The period of change; it may be to worse or to better.
Cul-de-sac. A pouch.
Cupping. Drawing blood by lancing, and the application of a heated cup.

DECUSSATE. To cross each other.
Defecation. Evacuation of the bowels.
Dejections. Matter voided from the bowel.
Delirium. Mental aberration.
Deltoid muscle. A muscle passing over the shoulder and terminating at the centre and outer part of the upper arm.
Depurative. Purifying. Removing impurities.
Dextrine. A substance obtained from starch.
Diagnosis. Discovery of a disease by its symptoms; discriminating between a disease and others with which it may be confounded.
Diaphoretic. Inducing perspiration; sweating.
Diaphragm. The muscle separating the chest and its contents from the abdomen and its contents.
Diastaltic. Reflex action induced by the spinal marrow.
Diathesis. Tendency of the constitution to a particular disease.
Diathetic. Relating to predisposition to disease.
Dietic, dietetic. Relating to the food and drink.
Digestion. Conversion of the food into form suitable for nourishment and into refuse or excrement.
Disinfectant. Purifying or cleansing from infection.
Diuretic. Increasing by secretion the quantity of urine.
Dram. One-eighth of an ounce, or a teaspoonful of fluid.
Drastic. Very powerful cathartic action.
Duct. Canal.
Duodenum. The first part of the intestines.
Dysmenorrhœa. Painful menstruation.
Dyspnœa. Difficult breathing.

ECONOMY. The parts constituting the body or the laws governing them.
Effete. Worn out; useless.
Effusion. Escape of a fluid.
Elimination. Ejection by stimulating the secreting organs.
Eliminatives. Agents which expel substances from the body, as by the skin, kidneys, etc.
Emaciation. Loss of flesh.
Embryo. The animal in its earliest existence in the uterus.
Emesis. Vomiting.
Emission. See pages 535, 538.
Emulsion. A pharmaceutical compound of oil and water.
Excretory. Any organ of the body acting as the outlet of effete and worn-out matter.
Enceinte. Pregnant.
Encephalon. The head; all within the head.
Encysted. Covered with a membrane or sac.
Endosmosis. Fluids passing through membranes into structures.
Enema. Liquid injections into the bowel.
Enervation. Weakness.
Enteric. Intestinal.
Entozoa. Worms.
Epidemic. A disease attacking many individuals in a locality at the same time.
Epithelial. Relating to the thin covering to the eyes, lips, mouth, intestines, and the like.
Erosion. Corrosion; eating away.
Erosis. Amatory passion.
Eructions. Wind or gases raised from the stomach with some noise.
Essence, essential. The active principle of plants. A diluted oil.
Eustachian tube. A canal about two inches in length connecting the ear and back of the mouth (pharynx).

Exacerbation. Increase in fever.
Erythematous. Attended with fever and skin eruption.
Excito-motory. Reflex nervous action.
Excito-nutrient. Affecting nutrition by reflex nervous action.
Excito-secretory. Affecting secretion by reflex nervous action.
Excrement, excrementitious. Matter ejected from the bowel.
Excretion, excretive. The faculty of selecting and discharging from the system fluids, as in sweating and in urine, useless matter as in feces, and impurities by either.
Exhaling. Breathing out; throwing off vapor.
Expectorant. Remedies which loosen phlegm in the air-passages, and hence facilitate its discharge and relieve oppressed breathing.
Expectorate. To discharge mucosities by coughing and spitting.
Expiration. Exhaling air by the lungs.
Extravasate. To escape from the containing vessel and permeate the surrounding textures.
Exudation. Escaping or discharging through pores.

FARINACEOUS. Containing farina or flour.

Fascicles. Little bundles of fibres.
Fauces. The back of the mouth and upper part of the throat.
Feces, fecal. That part of the food remaining after digestion and which is ejected at intervals from the bowels.
Feculent. Foul.
Fermentation. Chemical action and combination by which new substances are formed.
Fibre, fibrous. The hard, elastic, organic particle which, aggregated, forms muscle and other tissues.
Fibrine. An organic substance, fluid, coagulable, found in the blood, lymph, etc.
Filaments. A thready fibre.
Flagellation. Flapping the body with the corner of a wet towel or the snap of a whip.
Flatulence. Wind in the stomach and bowels.
Fœtus, fetal. The young of any animal during uterine existence. Pertaining to the unborn.
Follicle. A little depression throwing off moisture to keep the contiguous part soft and supple.
Foreskin. The prolonged skin of the penis, which covers the glans or head.
Fumigation. Disinfection by gas, smoke, or vapor.
Function. The normal or healthy action of an organ.
Fundament. The seat; anus.
Fungus. Parasitical plant.

GANGLION. Masses of nerves resembling brain.

Ganglionic. Composed of ganglia.
Gangrene. Mortification; local death. See page 679.
Gastric juices. The digestive fluid secreted by the stomach.
Generative. Productive.
Genetic. Pertaining to the genital organs.
Genitals. The generative organs.
Germ theory. The theory of the propagation of disease by germs floating in the atmosphere.
Gestation. The period of carrying the young in the womb.
Glands, glandular. Organs of the body, each possessing vital properties peculiar to itself, as secretion of tears, milk, saliva, urine, excretion, etc.
Glans. The conical end of the penis, covered by the foreskin.
Gluten. The ingredient in flour (farina) which gives it adhesiveness.
Grain. One-sixtieth of a dram.
Graminivora. Grain-eating animals.
Granular. Consisting of little grains.
Granules. Little grains.
Gripping. The pains of colic.
Gullet. The canal for food leading from the throat to the stomach.
Gynecology. That part of the science of medicine devoted to the diseases of women.

HETIC. Debilitated; exhausted.

Hereditary. Transmitted from parent to child.

Hibernate, hibernation. A partial suspension of animation. Animals that sleep through the winter, hibernate.

Histogenetic. Tissue-forming.

Hydragogues. Medicines producing copious, watery, alvine discharges.

Hydrocarbons. Starch, sugar, and oils.

Hydrogen. A light, inflammable gas, forming, by chemical combination, water and animal and vegetable matter.

Hygiene, hygienic. The science of the preservation of health.

Hymen. A fold of membrane at the outer orifice of the vagina, found sometimes, but not always, in virgins.

Hypertrophy. Increased nutrition and consequent growth.

Hypnotic. Producing sleep.

Hypochondriasis. Belief in the possession of an imaginary disease.

Hypodermic. Under the skin.

Hypodermic syringe. An instrument for injecting liquid remedies under the skin.

ILEUM. The convoluted portion of the intestines.

Impotence. Loss of sexual power; inability to copulate.

Indications. The symptoms or conditions needing medication.

Infection, infecting. The communication of disease by touch, food, drink, or the breath.

Infecundity. Unfruitfulness.

Infiltrate. To penetrate the pores of a part.

Inflammation. A condition attended with heat, pain, redness, and swelling.

Injection. Passing a liquid into a cavity of the body, through and by means of a syringe.

Innocuous. Harmless.

Inoculation. Taking a disease by contact with an abraded surface.

Insolation. Sunstroke.

Insomnia. Inability to sleep.

Inspiration. Inhaling air by the lungs.

Inspissated. Thickened by evaporation.

Instinct. An inborn principle directing to health and self-preservation.

Intercostal. Between the ribs.

Intestine, intestinal. The canal from the stomach to the anus; the bowels. Relating to the intestines.

Invermiration. Infested with worms.

Iris. The colored membrane seen in the eyeball; it is blue in blue eyes, gray in gray eyes, etc.

Irritation. Local excitement, or excess of vital action.

KIDNEYS. Two organs, one on each side of the spine, internally and above the small of the back, which secrete the urine from the blood.

LACHRYMAL gland. Organ for forming tears.

Lachrymation. Weeping.

Lacteal. Milky. Vessels containing chyle.

Larynx. The Adam's apple of the neck; the upper part of the windpipe which contains the organs of voice.

Lancinating. A deep and sudden pain, compared to the stab of a lance.

Leeching. Removing blood by the application of a leech.

Lesion. A diseased change.

Leucocytes. White corpuscles of the blood.

Leucorrhœa. Whites. See page 615.

Liquor sanguinis. The fluid part of the blood, holding in solution fibrine, albumen, etc.

Liver. The great assimilating gland of the body. It is situated below the diaphragm or midriff, and above the stomach, bowels, and kidney, and extends from the base of the chest to the spine, and from side to side.

Lobe. A rounded, projecting part.

Loins. The small of the back, between the ribs and pelvis.

Lungs. Two organs situated in the chest, one on each side, with the heart between; the organs of respiration.

Lymph, lymphatic. The fluid secretion of the lymphatic glands, which is emptied into the circulation.

MACKINTOSH. Cloth covered with waterproof material.

Malaria. Poisoning emanations in the air, producing disease.

Mammary gland. The female breast.

Mastication. Chewing the food.

Masturbation. Personal excitement of the sexual organs.

Median line. An imaginary line dividing the body into the right and left side.

Medulla oblongata. An organ, marrow-like, lying at the base of the skull.

Medullary. Pertaining to the marrow.

Membrane, membranous. A thin, web-like structure covering parts and organs, and lining cavities.

Meninges. Coverings of the brain and spinal cord.

Mensis, menses. The monthly uterine flow during the middle age of women.

Menstrual. Pertaining to the monthly flow.

Mesentery. The folds of the peritoneum which hold the intestines in place.

Metamorphosis. Transformation.

Metastasis. Change in the seat of a disease.

Miasm, miasmatic. The germs of disease floating in the air, which produce infection.

Microscope. An instrument for magnifying minute objects.

Micturate. To evacuate the bladder.

Molar teeth. The sixth, seventh, and eighth teeth from the centre of the lips.

Molecule. A little portion of any body.

Morbid. Diseased.

Motor. Moving.

Mucilages. The gummy principle of plants.

Mucoid. Like mucus.

Mucus, mucous. A viscid fluid, which in health keeps the membranes in their proper condition.

Myopic. Near-sighted.

NARCOTIC. A stupefying remedy; in large doses destroying life.

Nausea. Sickiness at the stomach; ineffectual effort to vomit.

Navel. The round scar at the centre of the abdomen, marking the place of attachment of the cord previous to and at birth.

Neuralgia. Nerve-pain. See page 338.

Neurine. The substance of which the brain is composed.

Nitrogen, nitrogenous. The gas constituting four-fifths of the volume of the atmosphere.

Noxious. Poisonous; harmful.

Nucleus, nuclei. The germinal point in a cell: kernel.

Nutrition. Increasing in growth, or supplying the materials for growth.

OBSCURE. Half egg-shape and half heart-shape.

Obesity. Excessively fat.

Oesophagus. The food-passage from the throat to the stomach.

Estruation. Periodical sexual desire; heat.

Oleaginous. Oily.

Ophthalmoscope. An instrument for examining the interior of the eye by concentrated and reflected light.

Optic nerve. The nerve conveying visual impressions from the eye to the brain.

Osmosis. Attraction of fluids for each other through moist membranes and their motion.

Ossicles. Little bones.

Ounce. One-sixteenth of a pound; in fluids, eight drams or teaspoonfuls.

Oxygen. The gas constituting one-fifth the volume of the atmosphere. It supports combustion.

PAD. A folded cloth used as a support.

Palate. Roof of the mouth.

Palatine arch. The arch, in the rear of the mouth, formed by the palate bone.

Palsy. Loss of sensation or motion, or both; paralysis.

- Pancreas, pancreatic juice.** A large gland in the abdomen, beneath and behind the stomach. Its secretion.
- Papillæ.** Little raised points upon the surface; they can be seen upon the tongue.
- Papulose, papular.** With dry pimples.
- Paralysis.** To lose the power of motion in a part, or sensation, or both.
- Parasites.** Animals or plants that subsist upon others.
- Parenchyma.** The texture of organs like the liver, kidneys, etc.
- Parotid gland.** A gland at the angle of the lower jaw, which secretes saliva and discharges it by a short tube upon the cheek near an upper molar (back) tooth.
- Paroxysm.** The period of more aggravated symptoms, following an interval of comparative freedom.
- Parturition.** Childbirth.
- Pathology.** That department of medical science whose object is the knowledge of disease.
- Pelvis.** The bony structure at the termination of the spine, enveloping and protecting the lower intestines, bladder, genitals, etc.
- Pentandria Monogynia.** A name given to a class of plants having five stamens and one style.
- Percussion.** Striking with the finger-tips to discover by the resonance the condition of internal parts.
- Perineum.** The part between the genitals and the anus or tip of the spine.
- Periodicity.** Occurring at regular periods, as a chill every other day, etc.
- Periosteum.** The tough membrane covering all bones.
- Peristaltic.** The peculiar motion of the intestines which propels its contents forward, somewhat like the crawling of a worm.
- Peritoneum.** The membrane lining the abdominal walls and covering the intestines.
- Petaloid.** Resembling a leaf-stock.
- Petals.** The colored leaves of a flower.
- Pharmacist, pharmacæutist.** One who manufactures drugs.
- Pharmacy.** The manufacture of drugs.
- Pharynx.** The posterior portion of the cavity of the mouth, behind the palate, above the wind-pipe and gullet. The breath and food pass through it.
- Phosphorus, phosphates.** A substance familiar to us in matches. It is a constituent of the brain and nerves.
- Phrenic nerve.** The respiratory nerve. It arises in the neck, passes through it and the chest, and is mainly distributed to the diaphragm.
- Physiology.** The functions of the organs of the body; the phenomena of life.
- Pile-compressor.** An instrument supporting the rectum and anus.
- Placenta.** A fleshy body attached to the womb and by a cord to the child, supplying blood and nourishment before birth.
- Plasma.** The fluid portion of the blood holding in solution fibrine, albumen, etc.
- Plastic.** Formative.
- Plethora.** Abounding in blood; full-blooded.
- Pleura.** A wetted membrane lining the walls of the chest and covering the outer surface of the lung. There are two.
- Plexus.** A net-work of blood-vessels or nerves.
- Pneumogastric nerve.** The great nerve distributed to the chest and stomach.
- Polypus.** A kind of tumor.
- Post-mortem.** After death.
- Prepuce.** The prolonged skin of the penis which covers the glans or head.
- Probang.** A whalebone rod with a sponge on one end.
- Probe.** A wire for examining wounds, canals, etc.
- Prophylactic.** Preventive.
- Prostate gland.** A gland at the upper portion of the urethra surrounding it and touching the bladder.
- Psoas muscle.** The great muscle which draws the thigh up to the abdomen.
- Puberty.** That period of life, about the age of 13, when the procreative organs most rapidly develop; hair grows about them and upon the face of the male, the breasts of the female enlarge, and, in fact, the period of youth has passed and that of manhood or womanhood arrived.
- Pubic bone.** A bone in the lower abdomen immediately under that part of the surface covered with hair.
- Pulse.** See page 46.
- Pupil.** The circular opening in the colored part of the eye (iris).
- Purgative.** A medicine causing free alvine discharges.

Pus. Matter discharged from inflamed tissue.
Fustules. Mattery pimples.

RECEPTACULUM CHYLI. A hollow organ for holding chyle.
Rectum, rectal. That portion of the bowels nearest the outlet.
Recuperate. To regain health and strength.
Regurgitate. To flow backward.
Remission. Decrease in fever.
Renal. Pertaining to the kidney.
Respiration. Breathing.
Retching. Ineffectual effort to vomit.
Retina. The lining to the eye.
Revolutive. Agents which create diseased action on the surface to relieve internal disorder.
Roborant. Strengthening; tonic.
R, recipe. Take the articles following.

SACCHARINE. Of the nature of sugar.
Saliva. One of the digestive fluids which is mixed with the food during mastication.
Sanitarium. A remedial institute.
Schneiderian membrane. The lining of the nasal cavity.
Scrofulous. Of the nature of scrofula.
Scrotum. The skin covering the testicles.
Sebaceous. A name given to the oil-glands of the skin.
Secernent. Secreting.
Secrete, secretion. Drawing out fluids from the blood; each gland absorbs material peculiar to itself.
Sedatives. Remedies which control or depress excessive vital action.
Self-pollution. Personal excitement of the sexual organs.
Semen. The fecundating fluid of the male which is secreted by the testicles.
Seminal. Pertaining to semen or sperm.
Sensorium. The centre of sensations.
Sepals. The leaves of the envelope of a flower.
Serum, serous. The watery portion of animal fluids.
Sigmoid flexure. A bend in the intestines just above the rectum.
Sinapism. An irritating plaster.
Sound. A solid rod, catheter shape.
Spasms. Violent and involuntary muscular movements.
Specific disease. Syphilitic diseases; private diseases.
Speculum. An instrument for dilating the orifice to internal canals or cavities.
Spermatic. Pertaining to sperm or the organs of generation.
Spermatic cord. A cord consisting of blood-vessels, nerves, and the canal of the sperm, which supports the testicle.
Spermatozoa. The formative agents in generation found in the semen of the male.
Sphincter. A round muscle closing an outlet.
Spicula. A splinter of bone.
Spleen. A spongy organ situated deep in the upper abdomen, between the kidney and stomach.
Sputa. Expectorated matter.
Squamous. Scaly.
Stercoraceous. Excrementitious.
Sternutatives. Remedies which provoke sneezing.
Stethoscope. See illustration, page 461.
Sthenic. Possessing excessive strength.
Stun. Unconsciousness produced by a blow or fall.
Stupor. Diminished sensibility or exercise of the intellectual faculties.
Styptic. Arresting hemorrhage; astringent.
Sublingual gland. A salivary gland under the tongue.
Sudoriferous. A name given to the sweat-glands of the skin.
Suppository. A semi-solid medicine deposited in the rectum.
Suppurate. To discharge matter or pus.
Suspensory bandage. See illustrations, pages 317 and 562.
Sympathetic nerves. The nervous system of the automatic functions.
Symptom. A sign of disease.
Syncope. Fainting.

TAMPON. A plug made of lint or cotton.

Tapping. Drawing off fluids in cavities by puncturing the surface.

Tenesmus. Violent contractions.

Testes. The male organs contained in the scrotum.

Testicles. Testes.

Tetanus. Permanent contraction of muscles.

Therapeutics. The department of medical science concerned in the treatment of disease.

Thoracic. Pertaining to the chest.

Thyroid glands. Throat-glands.

Tissues. The anatomical elements of organs.

Tonics. Remedies which improve the health and strength.

Tonsil. A gland at the side of the throat near the soft palate.

Toxic. Poisonous.

Trachea. That part of the windpipe between the larynx or vocal organs and the bronchial tubes.

Traumatic. Pertaining to a wound.

Tubercle. Concretions of degenerated matter. See page 461.

Tubule. A little tube or canal.

Tympanitic. Having a drum-like sound from the accumulation of air.

Tympanum. The drum of the ear.

ULCER, ulceration. A chronic sore situated in the soft parts. A diseased action resulting in ulcer.

Umbilicus. The navel.

Uremic. Pertaining to urine.

Urea. A constituent of urine.

Ureters. The canals, two in number, carrying the urine from the kidneys to the bladder.

Urethra. The canal or pipe leading from the bladder for the conveyance of urine from the body.

Uric acid. A constituent of urine; in excess it forms combinations, producing calculus or stone.

Urine. The secretion of the kidneys which collects in the bladder and is discharged through the urethra.

Uterus. An organ situated between the bladder and rectum and above the vagina, which holds the fetus during gestation.

Uvula. A fleshy organ hanging from the centre of the soft palate.

VACCINE. Pertaining to small-pox.

Vagina. The canal, five or six inches in length, leading to the uterus or womb.

Varicose. Pertaining to a dilated vein.

Vascular. Full of blood-vessels.

Vaso-motor. Affecting vessels by reflex nervous action.

Vein. A blood-vessel which, with one exception, carries the blue or venous blood.

Ventricle. A chamber in the heart.

Vertigo. Dizziness.

Vesicle. A bladder-like sac.

Vesicular. Full of little vessels.

Vicarious. In place of another; a function performed through other than the natural channels.

Virus. The poison transmitting infectious disease.

Visus, viscera. An organ of the body. Organs.

Vitality. The vital principle.

Void. To evacuate.

Vomiting. Emptying the stomach upward.

WATER-BRASH. A profuse flow of saliva.

Womb. An organ situated between the bladder and rectum and above the vagina, which holds the fetus during gestation.

ZÖON, zöë. Animal. Animals.

Zymotic. Epidemic and contagious.

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SAN FRANCISCO, CAL.

PHYSIOLOGY;
OR,
THE FUNCTIONS OF THE BODY.
THE PHENOMENA OF LIFE.

WHAT EVERY ONE SHOULD KNOW.

THE physical life is constituted by the union of the vital principle with the organic structure. We are "fearfully and wonderfully made." The body is made up of tissues of organs, each of which has a distinct source of power, from which alone it may derive its ability to perform its peculiar functions.

The vital properties have their origin in the ganglionic system of nerves, combined with the lower brain and spinal marrow. Right over the stomach, the principal of them all, the semi-lunar ganglion, holds sway, receives impressions, and gives forth energy to the various parts. There is a nervous channel to each division, which supplies it, having no intercommunication with other channels. The energy never moves backward, but goes on to its place, is there expended, and succeeded by new relays.

By virtue of operating different kinds of the bodily apparatus, a great variety of functions are performed. By one force saliva is se-

creted; by another, gastric juice; by another, bile, and so on. Thus, in voluntary moving of the muscles, the vital forces have a variety of operations. The fibres are charged with power from one set of nerves, to give them ability to act. This endows the muscle with the simple power of contracting, and with this simple endowment, it would spend its energies in spasmodic action. But as though to prevent this and make the muscle serviceable, there is a second set of nerves which holds it in subjection to the will of the individual. It, however, requires another nerve after this, to carry the mandates of the will into effect. Besides, there must be nerves of sensibility to give them the power to feel. There must also be regular telegraphic communication between the nerves and the *common sensorium*. Thus there are five distinct sets for every muscle that moves in obedience to the will. One, to empower it to act; the second, to control it, so that it may be directed by the will; the third, to secure obedience to the will; the fourth, to impart to it the sense of feeling; and the fifth, to maintain communication with the central authority. For example, if the arm is supplied with power in full force, the muscles are ready to act, whether regularly or spasmodically. If the supply of force is scanty, the action will be feeble; if it is entirely cut off, the arm is paralyzed and cannot move. If the second set is in full force, the muscular action, whether strong or feeble, will be perfectly controlled and regular; but in case that there is no muscular power to be controlled, the office of these nerves is rendered of no account. When the third set is interrupted in action, the arm will move or rest at its own option. Paralysis of the fourth set will deprive it of the sense of feeling, so that it may be pinched, pricked or cut without sensation. If the fifth set, the telegraphic nerves, are cut or rendered powerless, the arm may have a sensibility of its own, may wince or twitch when injured; but the action of the will can do nothing directly for its relief.

Many of these nerves are convoluted: i.e., they are wound up in themselves, and so form masses resembling brain, and doubtless have such function to a certain degree. These masses are the

ganglia, or knots, and are generally numerous in the neighborhood of the most important organs. They are repositories of force for the parts of the body to which they relate. To what extent they elaborate that force we can only guess. We know this much—that every cell, nucleus and molecule has a vitality peculiar to itself, enabling it to maintain its own existence and carry on its specific office. The same thing is true again of each tissue and organ. But the mere concurrent action of these does not serve the purpose. There is a central power to attract them and enable them to act as one. It is the support of them all. It has its own material, whatever this may be, to work up. It does not depend on the nutritive function for this; nor, indeed, very much for its organic sustentation. It is always in operation by night and day, whether the person is sick or well, awake or asleep, busy or inactive.

While each organ and group of organs has its own source of power to supply itself, the essential organs have a common power to impart to their aid, especially in case of emergency. We call this the *reserve force*. It is transmitted through the body to its most important organs, by means of the great sympathetic or ganglionic nerve. We find it necessary, therefore, as physicians and pathologists, to explore critically the constitution and offices of this most essential element of the bodily structure.

We do not belong to that school of thinkers who extol the potentiality of matter on purpose to exhibit the nothingness of God. The Universe is dead without its Divine Orderer. The sensitive plate called Nature, can display no image except one has been impressed there. There can be no development or evolution of anything which has not been involved and inspired. We may not care to go to the extent of blind supernaturalists, and yield a superstitious credence to what they assert. We may refuse to acknowledge the existence of secrets that we are not at liberty to explore. We may demand a view of the Light and deny our homage to the thick Darkness. But we will steer clear of the servile credulity of disbelief. Because we do not see God with our eyes, we will not deny his

existence. Because we have not ken or mental power to solve the enigmas about us, we will not be so arrogant as to deny them. We do not admire a creed so brief as one must be which includes only what we understand. The science which would eliminate the interior spirit from man, and God from the universe, is to our comprehension frightfully inexact. We care not who are its apostles, who assume to be its votaries. They are not, for all their intricate learning, any whit short of being stupendous ignoramuses. At every step they exhibit their laborious efforts at stultification. Reasoning a Deity out of existence, they find at every turn that they have only substituted the Unknowable for the Unknown God.

The essential principle of life is a positive entity, transmitted through the medium of the nerves, but is not created or evolved by them. Its elaboration is, in a very great degree, independent of the functions of the body. We abound with examples of illness or impaired health, attended with extreme debility and entire suspension of the nutritive function for a considerable length of time, where the patient, nevertheless, has recovered. Multitudes of cases of apparent death illustrate the same fact. Persons have died, to all appearance, become cold and stiff, been shrouded for burial and laid in the coffin, who, after a period of hours and even days, have come to life, and even recovered health. We often do not know when the dead have become so, and beyond reasonable doubt bury persons that might have survived. Many very intelligent men, who have critically investigated this matter, give very careful instructions about their own bodies after decease.

In other countries, persons have exhibited the remarkable power of suspending animation and remaining apparently dead for months. Some were able by voluntary effort to recover vital warmth, while others required adventitious aid. Animals do the same thing, hibernating for long periods, and doubtless there is a like capacity in human beings. When the vital power can call up and put forth energy sufficient, it will overcome any amount of apparent death. The chemical affinities which are destructive only to the

tissues, are compelled to hold back while the potential force exists to control.

In the building up and support of the body there are two functions always co-ordinate, the plastic and decomposing. The very molecules are *histogenetic* and *histolytic*. There is a general decomposing force in the body from the beginning of life till its close. The function of nutrition, consisting of the digestive and secreting system, is in constant operation to build up and sustain the body, while the absorptive and excretive system is as constantly taking away that which is effete. The perfection of the whole health and normality depend upon the activity of both functions. Under the constant wear, some portion of every organ is rendered unfit for its place, which is then likely to impede the healthful action of the rest. But, under the normal operation of the physiological law, no sooner does a particle of matter become unfit for its place than it is caught up by an absorbent, thrown into the general mass of circulating fluids, and passed out of the body by the most convenient emunctory. At the same time, another particle of the same size, form and character is prepared by the nearest secretory vessel, put in its place and endowed with vitality, thus becoming a constituent part of the living body. In this way, the sound body will long retain its identity of size, form, weight and complexion, while all the time its component parts are undergoing rapid and unceasing changes. The most firm and permanent parts are thus wrought over once every seven years ; and the less permanent are renewed in as many months. The wonderful facility with which this is done surpasses common marvel.

But in all this there are really no antagonistic functions in conflict. The vital principle that lies back of all organism provides for the one as well as the other. They act by pre-established harmony. The chemical affinities are employed just so much as convenience may require. "Nature" turns these forces to account, undoubtedly ; but does not depend upon them for the supply and regulation of animal heat. Hence heat is often elaborated when the health is

impaired, without oxygen or combustible substance. While she has supreme control, she tolerates no rival. She is often crippled, but even then she admits no joint participation of power. It is all vitality while there is vitality, and when that ceases all is chemical affinity.

This vital activity does not arise from the mutual action of oxygen and the elements of the food. Perhaps, if it did, men might obviate the final dissolution. The fact that has been cited of persons lying for days and weeks without food, or using only the slightest amount, shows that "man does not live by bread alone." There is some other source than a chemical process. In these cases of suspended animation, where there is to be resuscitation, every part of the body must be kept constantly supplied with enough of the living principle to ward off the destructive action of chemical affinity and to restore the suspended powers. No person is dead till these powers cease to operate and the body begins to decay. We shall do wisely to inquire more carefully concerning the principle of life and depend less upon phenomenal action.

The mental alienation occurring in cases of debility is due to that cause ; and most such persons recover the possession of their reason before death. The brain is not disorganized, but disabled.

In tetanus, the nerves are enfeebled or paralyzed, whose function is to control the muscles and keep them subject to the will. In the interval of relaxation, the contractile power acts, producing convulsions. They cease when the superior power resumes ascendancy.

In the vital economy, every organ and department has its own laws and instinctively performs whatever is necessary for its preservation. The stomach does its own work, maintaining its own functions and converting food into chyme. It is intelligent and makes its wants known. It expresses gratification when supplied with agreeable food, gives a signal on receiving enough, and when permitted, makes the best use of what it obtains. The other organs have their analogous powers. The laws are fixed and uniform. Art cannot change these or furnish substitutes. It cannot hasten the

elaborating power, or augment it at any given time. When the stock of energy is reduced to barely what is necessary for ordinary use, any reduction below that amount is certain to be followed by disorder. We have disease—the negative of ease. The great number of disorders ensuing with change of the weather and from exposure are to be attributed to this cause. Colds, rheumatisms and fevers are among the more common forms of ailment.

There are, therefore, three forms or phases of departure from the condition of health—the declension of power, functional derangement, and organic derangement.

The first of these is most common, and perhaps least noticed. A perfectly sound body is proof against every disease. It can, on every occasion, summon vital force enough to guard against injuries and repair damages without display of unsoundness. This is the normal state of man and of every animal. It would seem, however, as though for ages mankind had been employed in destroying such a condition; and hence there are, on every hand, large numbers who, if not actually diseased, are yet, from the low state of their vital powers, constantly liable to attack. There is never, there can never be, such a thing as excess of power. The more power any part of the body has, the nearer it approaches the standard of perfect health.

It is not easy to understand what disease is from the definitions of medical men. We sometimes are ready to accept the declaration of Magendie, the great physiological writer, that they know nothing about it. Certainly, French physicians seem to act from that standing-point, and treat invalids with regard to the power which they have, rather than from any medical aid they themselves are able to render.

In truth, when the powers of the body are impaired, the deviation from healthy action is the signal of a deficiency of vital force. So long as there is no such thing apparent, there is no alarm, although the vital organs are often so injured and impaired in energy that the person is on the brink of death. It is a curious fact that when the alarm has been raised, the anxiety and endeavor are all bestowed

to get rid of the peculiar symptoms. Yet, if an army should be alarmed because of the signal guns of its pickets, he would be accounted a poor general who should remove the pickets and sentinels in order to allow his men to be relieved of distressing excitement. Yet this is what medical men aim at, and their patients require from them. The treating of phenomena and symptoms constitute the principal part of medical practice.

Yet many of these deviations, known as functional disease, are but the shifts which "Nature" employs to meet and remedy the difficulties which are constantly occurring in some portion or other of the complex physical structure, through violation of the laws of life. Every organ and part is liable to derangement from some incidental deficiency of energy. The "symptoms," as they are called, the external announcements of the defective state of affairs, will depend on the nature and functional character of the parts affected, the degree or deficiency of vital power, the nature and amount of force present and the operation of disturbing causes. These should be carefully observed by the physician, who should abstain from special endeavor to modify the symptoms and direct his attention to the renovation of the impaired forces. We may be sure that when this has been duly effected, the derangement will cease and all will go on thenceforth in its usual order. The principle of action, as will be seen, is very simple ; the skill and experience of the physician are required for its application.

Take such a disorder as epilepsy. There is impairment of the interior portion of the brain. This results in a draft for power on those parts involving the large blood-vessels. They are enfeebled, and the blood, congesting in them, presses on the brain and prevents the free egress of nervous influence. This causes the fit. Directly afterward the forces are remanded again to the large vessels and the blood removed, which suspends the fit. But, the repair not having been made, there is another draft made and a return of the fit. This will be repeated till the individual is restored to health, or the difficulty rendered insurmountable, in which latter case death

supervenes. Sometimes the fits have recurred more and more frequently, till apoplexy ensued ; and this was followed by a more complete state of health. Such having been the case, we can easily perceive how much judgment is required in the way of permitting a reparative operation its legitimate sphere, and to abstain from too much effort to impede or divert.

When the recuperative operation of an organ is not ample for the removal of the effete matter and the supplying with new material, there is a change of structure. Even in functional disease there is more or less of this, but as it is only temporary it is not regarded. When, however, the change has become permanent, it is styled organic disease. The liver, heart and glands are all more or less affected in this way.

We perceive from this, that so long as the body is in full vigor, no part will take on disordered action. The energies must be reduced to a certain point ; as soon as they recover, the derangement will cease. If, however, the derangement of functional action is prolonged to a certain degree, structural derangement is the result.

The return to health must take place by the retracing of the way by which it was lost. Organic or structural disease is not always or often the harbinger of death ; and the same thing is true of functional derangement. When the important organs become deficient in vitality, they will yield, and the person die, before there is time for morbid change of function or substance. Even where lesions exist, they are the effects, not causes, of trouble. Though they occasion death, this is none the less true. It is not scientific treatment to deal with such matters and to disregard the conditions which caused such a manifestation.

In a sound constitution, where there is strict obedience to the laws of life, the whole organism will be kept in good condition, leaving a margin to meet all extraordinary demands on the vital forces. But, unfortunately, these examples are not numerous. There is a great deal of vital machinery more or less enfeebled, which is liable to derangement from any unusual demand or pressure of that kind. To

remedy this, the general economy renovates the enfeebled parts each in turn, beginning on one, and then taking another, till the whole have been cared for. It is of no account in this process whether symptoms appear to disclose the matter or its necessity; the work is all the same. The pathological condition of an organ is simply enfeebled vitality. No organ will deviate from its natural state to take on diseased action while Nature is strong enough to prevent this.

Many persons are subject to diversified forms of illness. At one period a cold seems to be imminent on all occasions, and the sensation of chilliness appears almost constantly. After a period this will all pass off, and there appears to be little risk, however careless the person is in the matter of exposure. The same thing is true of other disorders; they recur at periods, between which the person appears to enjoy every immunity. When any part of the machinery has been thus thoroughly put in order, it will so remain till it has been compelled to part with a large share of this stock of nervous energy.

Owing to this rotary system of repairing the body by renovating the several parts in turn, there are seldom two diseases found in the same individual at one time. But for this, several important organs might fall into disorder at the same time, and embarrass, if not endanger, life.

In fact, there is a general renovating work going on from the beginning of life to its close. In a perfect state of health, the repair will keep pace with the wear. Generally it is far enough in advance to permit no apparent disorder, no *symptoms*; but there is a state, which is strictly pathological, in which persons tire easily. When there are actual violations of the laws of life, or unwholesome conditions beyond our control, so that functional derangement is unavoidable, Nature arrests it as speedily as possible, and restores the functional condition of the parts to some point above what is regarded as actual disease.

The processes essential to life, and its varied manifestations, are those of nutrition and secretion. By these the body acquires its force

and performs normally its functions. Mere adding to the bulk of the body is an imperfect idea of the matter. The process is complex. Not only are digestion and assimilation comprehended, but likewise the circulation of the blood, respiration, secretion, excretion. We must regard them as a whole to obtain a fair idea of the whole matter. For example, digestion and assimilation are not only dependent on the food as to its quantity and quality, but upon the circulation, the respiration, which imparts the vital air, secretion, which separates the nutritive parts and elaborates them for their place in the structure, and excretion, which removes from the body those parts that have served their purpose.

By regarding this function in this manner the medical practitioner is enabled to arrive with more precision and exactness at the solution of those complications which he constantly encounters in diseases. He perceives that impaired nutrition should be treated by an endeavor to enable the deranged processes to return to their healthy state in the order in which they were deranged.

All foods are constituted of the elements carbon, hydrogen, oxygen and nitrogen, combined with certain mineral bases. As they are designed to replace these elements in the body, they must contain like constituents. The quantity is principally regulated by the amount of air we breathe. In the endeavor to ascertain the best varieties required for supplying the waste of the body, we must regard the chemical elements which are a part of the constitution, the mode in which these are combined to form tissues and organs, the atmosphere which surrounds, the waste and the structure itself. Thus, in the human body certain albuminous, fatty and mineral principles are required. The albuminous are the substances abounding with nitrogen; the fatty are those fats or other compounds which are readily resolvable into fat; the mineral are principally phosphate of lime and chloride of sodium. Every kind of nutritive food must contain these three principles. Experiments have been made with the separate elements, always resulting in starvation. Sugar, oil and gum as a sole diet will produce death in a dog in 33 days; white

bread will starve in about 50 days; cheese and white of egg will support life a little longer.

Mere nitrogenous food will not answer, as Liebig and other chemists seem to imagine. To form tissue requires that these be transformed into albumen and oil, so as to produce the molecules of the chyle from which the blood-cells are formed. All the elements exist in every tissue; but the fibrous tissues abound in albumen, the glandular organs in fatty, and the bones in mineral matter. All recent researches have indicated the great importance of the fatty constituents. The brain, the bones, as well as the soft fibres, are imperfect without them.

More food is required when the oxygen in the atmosphere is abundant. When cold and condensed, more oxygen will unite with the tissues of the body. Essential as this element is to the whole of our active life, it is so solely from its influence to bring the latent forces into activity, and so to waste the tissues of which the body is constituted. This waste creates the necessity for food. In warm weather, or in warm rooms where the oxygen is rarefied, less food is wanted.

Exercise also causes waste of tissue, partly from the wear of parts, and partly from the increased breathing required in case of muscular exertion. Active men, therefore, require more food than those who lead idle lives. It is computed that a laborer requires 35 ounces of dry, nutritious food daily. Sedentary people subsist upon less, but they are weak in fibre, and generally valetudinarians. About five pounds of the food daily eaten consists of water.

Chemistry, with all the endeavor to explain physiology and pathology, is incapable of being carried further. It cannot approximate any solution of a vital law or principle. All living beings are governed in their selection of food by laws essentially connected with structure, but out of the power of the chemist to elucidate. For example, vegetable albumen and animal albumen are essentially alike, but some animals can subsist only upon the one and some on the other. The carnivora reject vegetable food, and the granivora will

not eat flesh. Substances which contain little nutriment for one order of creatures are the chief food for others.

Another fact greatly overlooked is the necessity of an agreeable flavor to make food nutritious to the fullest extent. Where there is no taste, or a disagreeable one, the saliva will fail of being secreted, and imperfect digestion is certain to ensue. Of all causes of disease, irregularity in diet is the most common. As a corollary, proper attention to food is the most certain means of cure.

A curious fact is noticeable in the various kinds of animals—that of hibernation. At the approach of cold weather they cease to eat, breathe little, and exist in a torpid state till winter is past. Singular stories are also related of men having passed through similar periods, dormant and insensible, or partially so, often likely to be mistaken as dead and buried accordingly. These statements have been questioned, but chiefly by that class of persons who superciliously reject everything which they happen not to understand. We have seen it suggested, and that with great plausibility, that hibernation had once been a peculiarity of certain human families. Living in caves and dark apartments, their blood was deficient in many of the elements necessary to high vitality. They easily became dormant and cataleptic. They breathed little, had feeble circulation and sensibility. We can understand from this not only the marvellous tales of fakirs and jugglers, but the stories of the prodigious powers of endurance which have descended to us from former periods.

Under ordinary conditions, however, complete abstinence from food cannot be sustained longer than eight or ten days. In a moist atmosphere this time can be prolonged a little; but that is all.

The whole nutritive process is easily comprehended. The food is broken down in the mouth by the action of the teeth, jaws and tongue. It is at the same time moistened by the saliva. This operation is of imperative necessity, to fit it for further digestion. Starch is made sugar, and other constituents are materially changed in nature and properties. But a truce to chemical changes. The real transmutation is the appropriation, the reception of the aliment as a

constituent of the body. The saliva from the parotid glands permeates the food through and through; that from the submaxillary glands is magnetic in character and communicates the peculiar vital principle, while we at the same time recognize it as taste; and that from the sublingual and palatine glands is a viscous matter which surrounds the masses of food, but does not enter therein.

The action of the nerves which communicate with the mouth largely controls the salivary secretion. Mental emotion will sometimes arrest it altogether. Attractive food largely increases the quantity. A fit of anger will cause a portion of the iron of the blood to pass into the saliva, giving a strong metallic taste.

The more thoroughly the food is broken in the mouth, the better prepared it is for the action of the stomach. Rapid eating is a common cause of indigestion. The peculiar condition of the teeth is a secondary agent in the matter. The loss of a tooth is a misfortune. It obstructs mastication and contributes its share to a host of other ills, which compel a resort to the physician.

The food, having been transformed by mastication and insalivation into an alimentary bolus, is carried by a spontaneous, half-automatic motion of the tongue and neighboring parts of the mouth to the pharynx and the oesophagus, or gullet, by which it is propelled speedily to the stomach. The propelling action is denominated *diastaltic*. The upper opening of the stomach, termed the *cardiac orifice*, opens and admits the bolus. Immediately a commotion begins all through that organ. It moves like a crawling animal, and so brings the food into contact with its interior surface. Meanwhile, the interior membrane at every contact sheds out the gastric juice, in greater or less quantity, as the food has been more or less thoroughly insalivated. It possesses extraordinary solvent properties, especially upon albuminous substances. About fourteen pounds of this solvent are daily secreted and employed, and about three and a half of saliva. The vermicular motions of the stomach, as they are called, are continued till the entire contents are reduced to a semi-liquid mass, denominated *chyme*. It requires but a thought to perceive the im-

portance of thoroughly masticating the food, and not assigning that labor also to the stomach. The chyme, as fast as it is prepared, is passed from the stomach through the *pyloric orifice*. During the process of trituration in the stomach, that organ retains its contents with great tenacity, so that only the finest of the chyme will pass through; but the process once over, undigested masses will be expelled. The observations of Dr. Beaumont upon the stomach of St. Martin, the Canadian, have constituted the source from which many conclusions have been drawn.

It appears that the vermicular motion of the stomach is principally necessary for the perfect digestion of vegetable matter, flesh having been placed in metallic balls and thoroughly digested without the trituration. It is reasonably certain that the movements of the stomach are not necessary. Numerous experiments have been made with gastric juice outside the stomach, but it requires three or four times as long a period. We explain this on the supposition that the nervous influence is withheld which that organ possesses, and which is, though intangible, an important factor in the matter of digestion. The condition of the mind certainly influences the process as well as the period of life.

The stomach is not a simple organ, but highly complex. It is full of folds and convolutions, minute quadrangular cellular divisions, each of which can justly be regarded as no less than a little stomach which acts, in a measure, distinctly by itself. Every operation, therefore, of the entire organ, or viscus, is the result of the combined and manifold agencies of these minute stomachs, which really perform the more perfect work to which it is assigned.

A considerable portion of the elements taken into the stomach as food are absorbed from it by the different vessels set apart to that office. Fluid matters and the more refined constituents of the food are carried at once into the veins. The epithelial coat absorbs large portions, carrying it to the lymphatic vessels which abound there so largely and transmitting it to the mesentery and the *receptaculum chyli*. Other material which requires further purification is taken by

the gastric veins and transmitted to the liver. According to the old physiologists, the more important essentials of digestion were thus performed.

A sect of *yogis*, or ascetics, in Hindostan, regarding excrementation as a vile function to be avoided, have the practice of regurgitating or vomiting up their food, before any of it should have passed from the stomach into the intestines. We can pass no judgment on the tone and exaltation of the peculiar sanctity thus acquired; but they succeeded in escaping the act of defecation.

The further process of digestion is conducted in the intestines. A morbid squeamishness sometimes precludes these from being mentioned, but their processes are the more essential to growth, health and the whole economy of life. The small intestine leaves the stomach at the *pylorus*, and extends from 15 to 18 feet, enfolded in the mesentery and occupying the middle of the abdomen. It is usually spoken of as three—the *duodenum*, the *jejunum* and the *ileum*. There is no marked line of division between them. It is lined with mucous membrane, abounding with vessels which are full during the digestive process. This lining membrane is also full of folds or duplications, so numerous as to render the length of the membrane twice as long as the tube itself. Vessels, nerves and lymphatic glands are found between the folds. This arrangement enables the contents of the intestine to come into contact with a greater extent of surface, thus rendering digestion and the absorption more thorough.

When the chyme leaves the stomach it becomes mixed with the bile and pancreatic juice, the one a secretion of the liver and the other of the pancreas, a gland back of the stomach. A great deal of research has been expended upon the office of these fluids. That the bile is excrementitious has become generally acknowledged. It consists of matter separated and elaborated by the liver from the blood of the portal veins, and one element which it contains, cholesterine, is almost purely refuse. It is sometimes thrown into the blood, and there creates disease of a marked character. It has been supposed that the office of the bile in digestion is confined to the action of the

Biliary salts and its saponifying functions. It has also been supposed to regulate the peristaltic action of the intestine. Certainly it arrests the tendency to putrefaction. The contents of the bowels speedily become of a most offensive character where the bile is defective in character or quantity. Many of the prevalent diarrhoeas, dysenteries and other affections of the bowels are characterized, if not occasioned, by this fact. Bile also facilitates the digestion of fats; and both persons and animals more or less disordered in regard to the secretion, it is well known, betray much repugnance to fatty foods.

When by any accident it enters the stomach, it arrests digestion at once. Nausea, vomiting, loathing of animal food, and the whole array of symptoms known as bilious are the result. The principal part of the bile does not, however, become stercoraceous. It is, instead, taken into the blood, where it performs the office of separating from it the effete hydrogen and carbonic acid. The fluid thus first secreted or separated is deposited in the gall-bladder and is conveyed thence by the duct. As the entrance into the duodenum is smaller than at the beginning, there is some liability to obstruction from mechanical reasons or disease. Often it is easy to crowd its contents—a portion, at least—into the stomach by stroking the right side somewhat forcibly beneath the ribs. We have a great distrust of the medicines usually employed for the purpose of facilitating its flow or augmenting its quantity.

The *pancreatic juice* is next entitled to notice. It is the secretion of the pancreas, a gland resembling the parotid in structure. Like the bile, saliva and gastric juice, it is principally secreted when the imparted stimulus from the food calls it forth. During the intervals secretion is suspended. It begins, however, when food first enters the stomach, before chyme has begun to pass into the intestine. Its virtue as a digestive agent is due to the element of pancreatine. Its essential use is the digestion of fats. These pass through the body unchanged when the gland has been exterminated. It is the only agent in the body capable of forming a complete and permanent emulsion. The greatest part of the fat which is digested in the small

intestine is simply emulsionized, but not essentially changed in any other particular. Starch and other hydro-carbons are also acted upon by the pancreatic juice.

Another fluid, known as the *intestinal juice*, participates in the work. This is the direct secretion from the glands in the mucous membrane of the intestine and has long been an enigma to physiologists. It will digest albumen and cooked meat and change starch into sugar, showing that its province is to complete the function of digestion and to perform what the other digestive fluids will not. It has been found upon experiment that nutritive substances coming in contact with the intestinal juice alone were capable of supporting life, when contact with all the other digestive fluids failed of it.

Nevertheless, each of these secretions are auxiliary. The saliva stimulates the secretion of the gastric juice and this in turn the flow of the bile, pancreatic and intestinal juices; and a permanent disturbance of either secretion is a prolific source of disease.

During the period that the food is in the small intestine that organ is in constant motion, writhing and forcing its contents forward and backward. Meanwhile the chyme by the action of the pancreatic and intestinal fluids is dissolved, reduced to the molecular condition and prepared for reconstruction or *histogenesis*. It is immediately absorbed by chyle-vessels in the walls of the intestine.

The residuum having parted with the digestible material is finally conveyed to the extremity of the ileum. Here begins the large intestine, its beginning a species of *cul-de-sac*, denominated the *cæcum*. The intestine itself is known as the colon and is from four to six feet long. It ascends on the right side of the body from the *iliac fossa*. From this point the intestine proceeds by the sigmoid flexure to the rectum.

The opening by which the small intestine communicates with the *cæcum* is denominated the ileo-cæcal valve. The rejected contents of the ileum make their way through into the *cæcum* and are pushed forward into the colon. They sometimes remain here a considerable time; but as a rule are carried slowly onward by the contraction of

the muscular fibres, till they reach the sigmoid flexure. Here they accumulate till the period arrives for their discharge.

Many disorders, some of a very dangerous and even fatal character, arise from neglect in this matter. The fœcal substance consists of transformed cholestrine and the waste matters of the food; and when unduly retained their now fluid parts are taken up by the coat of the intestine and carried into the blood, inducing a morbid and sometimes highly dangerous condition. The more solid portions impact and become a hardened mass almost and sometimes entirely incapable of removal. Death sometimes takes place from this cause.

We do not countenance much tampering, however, to obviate costive habits of the body. Good sense among intelligent physicians is setting itself very decidedly against that class of drugs denominated as if facetiously, cathartic. They confer at best but precarious benefit. The worried organ, whenever it begins to recover from the weakening induced in its repose, becomes more inactive than before; and the wretched doser having set out in his road to ruin feels himself necessitated to continue his downward career. French physicians never purge and in common life the syringe has superseded the drastic. Here of course there may be and often is a great abuse. But healthy food joined with correct habits is seldom the occasion of constipated intestines.

It has been remarked that the action of the digestive fluids upon chyme in the small intestine reduced it to a molecular condition. The next operation is its removal to the circulation itself. This is accomplished by the mucous membrane of the small intestine. Along a large extent, this membrane is in folds or *rugæ*, almost double the extent of the intestine, thus affording an immense absorbing surface. A large portion of the bile as well as of the molecular elements of the food is thus carried away.

The mucous membrane is covered with an infinite number of minute projecting points, called in technical language, *villi*. Over these is a layer of epithelial cells. The fluid contents of the intestine are absorbed through the walls of these cells by the process

called *endosmosis*. Each cell by a species of vital or magnetic action peculiar to itself elaborates and transmutes the fluid which it has imbibed, forming the white milky fluid, the *chyle*. This consists in a vastly preponderating degree of the fatty emulsion created by the action of the pancreatic juice. If there is no such emulsion from whatever cause, there is no chyle. No chyloferous vessels exist in the intestine till after the point where the pancreatic duct passes out its contents. It is affirmed by some writers that defective action of the pancreatic fluid not only renders the chyle defective but results in the evolution of the corpuscles or degenerate histogenetic nuclei, better known as *tubercles*. Hence an artificial pancreatic emulsion has been devised where there is a defective action of this character and it has been represented as having proved beneficial in phthisis.

The villi of the intestine communicate with the chyle-ducts which pass into the mesentery or investing sheath. Here it passes through the lymphatic glands with which that membrane is abundantly provided. A lymphatic gland consists of a cortical and medullary portion, constituting a sac in which is a molecular fluid, numerous nuclei and a few cells, in all stages of development. These glands are diffused everywhere over the body and communicate with each other by lymphatic vessels. All these have valves which prevent the fluid from being carried except in one direction. They resemble the veins in their structure and character.

The lymphatic glands retard the flow of the lymph toward the great trunks and blood-vessels; and morbid matters which have been taken up by the absorbents are frequently retained by these bodies. Glandular disease is hence of common occurrence; and when from any cause it becomes malignant we have the various affections denominated *cancer*.

The lymphatic glands secrete or form the corpuscles of the blood. Peyer's glands at the very lining of the intestine begin; mesenteric glands, the spleen and other glands do their part in turn. The lacteals or chyle-vessels carry the chyle from one to the other so that each may perform its part. In each gland the molecular fluid derives

somewhat from the neighboring blood and the molecules continually aggregate together, forming the nuclei of cells. Both chyliification and sanguification are thus completed by the action now described. Ultimately the incipient blood thus created is gathered into one common receptacle and emptied into the thoracic duct. It speedily finds its way to the subclavian vein, the right side of the heart and the lungs; when by contact with oxygen it assumes the full red color of *arterial blood*.

When the pulmonary process is not completed by diseased glands the globules of blood are not reddened but remain in the condition known as leucocythemia. The presence therefore of leucocytes in the blood is assurance of a hypertrophied gland.

The circulation of the blood is not difficult to understand. It is a process carried on by the heart, arteries, capillaries or intermediary vessels and veins. In man and the higher animals there are two circulations recognized; the *systemic* or greater and the *pulmonary* or lesser circulation. In the former of these, the blood is considered as leaving the left ventricle of the heart, passing by the aorta through the systemic arteries into the capillary vessels and thence by the veins to the right auricle of the heart. The lesser circulation next occurs. The blood passes into the right ventricle, through the pulmonary artery to the capillaries of the lungs, in which it is exposed to the atmosphere, and then back through the pulmonary veins to the left auricle and ventricle, where the systemic circulation begins. The term circulation is also applied to partial movements, as the *portal* circulation to the passage of the blood by the portal vein through the liver, the cranial circulation to the passage through the head. The nervous circulation, however, is of a nature essentially distinct.

The contractions of the heart first propel the blood into the arteries. But the heart alone is not sufficient to account for the entire movement of the blood. Its mechanical force is far too little. The coats of the arteries are of analogous character and aid to carry the blood. Nevertheless, with the ramifying of the vessels and the resistance.

offered by the various tubes, the force is checked at the capillary system. Hence, the blood nowhere passes through an artery so rapidly as it flows when leaving the heart. The vessel is at first distended; there is an increase both of length and diameter, which is followed by a recoil and recovery of the previous condition. These changes constitute what is known as the *pulse*. It is felt when the finger slightly compresses an artery and is largely employed to aid in determining the character of a disorder. The volume or force varies, from a great variety of causes. Exercise increases the rapidity of the pulsations. We find them quicker in the morning than at evening. In health the pulse reaches its height at noon and is at its lowest point at midnight. It is more frequent in a standing than in a sitting position; and slower yet in the recumbent posture. The natural pulse of the adult man is from 60 to 70 per minute; of the adult woman, about ten higher. In the new-born infant it is from 130 to 140: in old age, from 50 to 60. In disease, there are great deviations. It has been known to be as low as 17, as in profound coma, and as high as 200 a minute in hydrocephalus. We have also the strong and weak pulse, the full and small, hard and soft, rigid, tense, wiry, thready—all which have to be learned by careful observation.

The offices of the blood are numerous. Its circulation is essential to their performance. It contains the vital principle which it derives from the nervous system, together with the fluids and rudimentary elements of the corporeal structure. There is no possible formation in the body, of which the blood does not furnish the principles. During every round of the circulation these are yielded up. The veins require the liquor sanguinis; the glands take what is wanted for preparing the various secretions; the fibres and nerves appropriate their share and the brain and ganglia draw out their peculiar spirit and energy. This wasting of the nutritive elements creates a condition analogous to hunger; for which nature has provided, in the stores of chyle prepared from the food, and lymph secreted by the lymphatic glands. While these are abundant, the body performs its

functions without complaint. But as the supplies become low, the ganglionic nerves become aware of the fact and report it to the solar plexus, where the sensation known as hunger presently manifests itself. Hence, the character of the deficiency also gives a definite direction to the appetite, causing one or another variety of food to be desired, according as the want happens to be.

The blood having parted with its essential virtues and substances next seeks to regain them. Forsaking the arteries and capillaries and taking in the contributions of the glands it makes its way as by its own ardor and purpose through the several veins to the great central duct, the *vena cava*, and thereby to the right auricle of the heart. It is now more or less nourished anew from the chyle and lymph and loaded down with the dross of the body which it has collected in its journeyings. The restless asphyxiating sensation is now communicated to it and it rushes through the ventricle and pulmonary artery to the minute cells and chambers of the lungs to unload its burdens and feed itself from the vital air.

The lungs are, after all, the rulers of the entire viscera. Every intestine, the stomach, liver, pancreas, spleen and the womb itself are subject to their dominion. Respiration calls every potency into motion. Life in the accepted sense of the term begins in full power with the inhalation of air. The brain itself and the spinal cord pulsate and contract, keeping time with the lungs. They are the organs which open to us the spectacle of corporeal existence and furnish the theatre for its display. There is no part of the body which the respiration does not influence; not a nerve-fibre which it does not stimulate into action. They drive the very fluid or spirit of the nerves into circulation. They serve also to blend the peculiar voluntary intellectual life of the cerebrum with the natural life of the cerebellum and medulla. They also receive impressions from the will; so that they give a complete representation of the dominant impulse. Anger, fury, courage, frenzy, fear, mercy, pride, etc., are set forth by peculiar swelling, drooping, sinking in or trembling of the breast, as also by the speech and its peculiar intonations and the expressions of the countenance.

So perfectly concurrent are they with the brain, that one moves when the other moves; if the one stops the other also stands still. They also are the agents which impart to the nerves the function of sensation. The holding of the breath will accordingly more or less paralyze the sensibility; as also will the inhalation of hydrocarbon fluids.

The inhalation of air by the lungs is denominated *inspiration*, the exhaling of it, *expiration*. Perspiration is the analogous function exercised by the skin.

The blood having collected in the right chambers of the heart, heterogeneously mingled, undigested and crude, is eagerly caught by the lungs and carried through the artery, along the bronchi, to every capillary and minute subdivision. In this condition the gross and effete portions are eliminated into the bronchi and trachea and cast from the lungs by expiration. The volume of the blood is reduced materially by this subtraction; the pulmonary vein which collects it to carry back to the heart, is smaller than the artery. What the lungs fail to remove by respiration is expectorated or carried to the palate. The inhaled air is made the vehicle to load with the effete matter for the purpose of conveying it from the body. In case this process is imperfectly performed, portions of the morbid material remain and fix themselves in the tissues of the lungs. Hence the numerous diseases which attack those organs.

The atmospheric air is carefully scrutinized by the various organs before it is suffered to enter the lungs. The papillæ of the olfactory nerve first discuss its agreeableness or unsuitableness; welcoming it heartily if it bears no noxious burden, but struggling against it, and shutting the nostrils, if it is repugnant. What is admitted undergoes a sifting and filtration, first by the nose and afterward by the trachea. Every endeavor is made to free it of all impure accompaniment. When, finally, it reaches the lungs, it is warmed and freed of noxious elements. The little vesicles and veins are now hungry and eager to obtain its nutritive principles. The blood has already put on its scarlet and is ready to unite with the new elements. Having done

this, the air is immediately loaded with the discarded impurities and driven away.

That the air actually nourishes the blood is apparent. It is always more or less involved in a cloud or ocean of emanations from the earth, water, minerals and vegetables—some of which are poisonous and others beneficial. It likewise contains the peculiar ether and force which the sun has imparted. The lungs and skin take them as food and are made vigorous by them. Hence we observe that sleep itself, and even ecstasy and catalepsy, are in some manner restoratives and sustainers of the blood. Many persons have prolonged life for months, years, and even longer periods, without taking sustenance in any ordinary manner. Many species of animals hibernate, and even subsist for years in this way. The emanations of food will often satisfy the appetite. The witnesses to these facts are numerous.

The blood, having been divested of its effete and noxious particles, is gathered again by the pulmonary vein and returned to the heart. It is now regenerated, and ready for a new career.

If respiration is embarrassed or difficult it constitutes *dyspnoea*. Its arrest constitutes *asphyxia*. This is the form of death produced by drowning or strangulation. It appears to be a general rule that if the air is cut off from the blood of a warm-blooded animal, all external movements of the muscles will cease in from 3 to 5 minutes, and the circulation of the blood in ten minutes. In the recent catastrophe of the steamer *The Princess Alice*, those who could not swim sank at once. The swimmers fared little better, however. The river Thames is the Cloaca Maxima of London, and those attempting to reach shore from the doomed vessel were so speedily suffocated by the mephitic gases from the water that they scarcely seemed to put forth an effort.

Some persons have acquired the power of remaining several minutes under water. The pearl-divers of the Indian Ocean will often remain under water and pick up oysters for 3 or 4 minutes. Under ordinary circumstances this would be sufficient to produce death; but

much depends on habit and practice. Besides, those oriental tribes appear to have a power, or rather a faculty, in regard to breathing which the occidentals know little about. They will spend days, weeks, and even months, in self-induced cataleptic conditions, excluded from the air and light, and afterward recover.

Persons falling into the water in a state of syncope, or having received a concussion of the brain, have been revived after the immersion of half an hour. Newly-born animals will survive much longer than adults; and the lower the temperature, the less rapid is the asphyxia.

In this condition the blood from the lungs reaches the heart unchanged, and in the venous form. It is transmitted thence through all the arteries and textures of the body. Its circulation through the brain paralyzes the sensorial function, and produces unconsciousness. The functions of the *medulla oblongata* are also enfeebled. The blood now becomes still more venous and disorganized; and the capillaries of the lungs receive it with difficulty. It collects in the right ventricle of the heart, and flows less in the arteries. The extremities become cold, the circulation is finally arrested, and death ensues. This is the mode of death not only by drowning, but by deleterious gases, and, generally, when a person is hanged. Despite the representations of its painlessness, we can with difficulty consider it as anything but torturous and cruel.

The catastrophe of the Black Hole, in Calcutta, is familiar to every reader. A large number of men were immured there over night, most of whom perished of asphyxia. Similar disasters have resulted under analogous circumstances. In the earlier period of the African slave trade, multitudes of negroes perished in this way while on the voyage across the Atlantic.

The crowding of rooms and public halls, it will be seen, is a prolific source of mischief. Disorders have been contracted in this way which become permanent and incurable. The diseases popularly denominated zymotic, and by the Homœopathics *psoric*, are often the sequence of exposure to bad air. It is notoriously prolific of

contagion. While pure air will neutralize and render innoxious the contagium of any known disease, impure air will disseminate it far and wide, if not generate it outright. The panics in regard to epidemic would all be obviated by proper attention to drainage, cleanliness and ventilation. Gen. Butler once banished and excluded yellow fever from New Orleans; but the inhabitants and their government brought it back with all its deadly accompaniments. It is a form of malignant typhus or typhoid, to be resisted by pure air and cleanly habits; but never kept away by quarantining.

The Asiatic cholera is another pest, the outgrowth of similar causes. Small-pox, diphtheria, scarlatina, pneumonitis and a swarm of kindred ailments spring up from badly-ventilated places like mushrooms from a hot-bed. We know of no prophylactic except what we have indicated.

The great scourge of our country and Europe, pulmonary consumption, must be included. It is charged to the account of cold weather, northern climates and hereditary predisposition, perhaps; but we are bold, audacious, to impute its existence to imperfect nutrition and bad air. It is impossible to have good digestion without the nervous system in proper tone and nourished with healthy blood. The venous circulation is always in quest of nutritive elements to supply those with which it has parted. Many of our feelings of restlessness, even our sharp pains, like neuralgia, are due to this cause.

Imperfect digestion is necessarily the prelude to imperfect assimilation; and this is the starving of the tissues. Disease is then inevitable. The blood is fevered by privation of its necessary aliment and either fails to nourish the fibres or to supply a diseased material which results in a morbid growth. Scrofulous deposit, tubercle, cancer, all are alike, as the cacoplasm is of the cell, nucleus, or prior molecule. These disorders are not without a certain contagious character. Inoculation will transmit them; and the peculiar sputa of phthisis will infect those who inhale it. The epithelial surfaces are easily impressed with deadly virus, from whatever source.

The air readily takes it up. If the oxygen is in volume sufficient it will neutralize and destroy the poison, but otherwise the air will be instrumental in its diffusion instead.

It is the opprobrium of the Eastern States that they are hot-beds of consumption. Certainly they display an extraordinary mortality from that cause. We have not time to give all the reasons which have been assigned. A few however are in point. One has been instanced by the late Theodore Parker. His own family was robust and exceptionally long-lived. But one of the number erected his house on a side-hill above an expanse of marsh. His descendants were tainted and died prematurely of consumption. This cause exists extensively over Connecticut and Eastern Massachusetts, where the ailment appears almost to be epidemic. The air of wet ground is laden with poisonous emanations, many of them undiscoverable by chemical tests. They not only poison the blood, but more or less paralyze the nervous system.

The thousands immured in factories where labor is irregular and often unwholesome and the air seldom pure, are exposed from the inception. We have but to add that the eastern house, till a comparatively recent period, was constructed as if to exclude the sunlight and atmosphere. Without these, healthy blood is impossible; yet they seem to have been run away from as if they were adversaries.

A healthy condition of the blood is necessary for a healthy formation of texture. This implies that all the processes of nutrition should be properly performed. The disturbance of any of them, as has been shown, impairs the growth and structure of the body. The blood, being itself a living substance, with consciousness, instinct and other properties, has the power to separate and get rid of deteriorated elements as well as to obtain needed aliments. The pus-cells of small-pox, the new epidemic of scarlatina and the peculiar emanations of various disorders are results of the effort of the blood to free itself from unwholesome substance.

A proper quantity of blood in a part is necessary for its nourishment.

If a principal vessel is destroyed or injured the parts supplied by it also waste and perish. When parts of the body are growing they attract more blood to them than usual. We observe this in an infinite variety of instances. The arms of mechanics become large and distended; and any part subjected to friction speedily reddens with the suffused blood, the textures thickening and what is called *callus* also forming. Young persons entering upon the period known as puberty experience an increased flow of blood to the sexual regions which both causes the enlargement of the various parts and increases their sensibility. All this is normal. But great care should be taken, during these processes, to avoid any undue enhancement of such circulation and sensibility. This tends to various disturbances of the economy and even to permanent evil. An abnormal flow of blood is certain to take place in any part of the body on which the attention is fixed. The sexual feeling intensified in this way is likely to become a passion difficult of control; while the premature development thus induced weakens that portion of the organism. The nervous system is involved, the nutritive processes disturbed and the body weakened. Precocious manhood and womanhood are perhaps among the less of the evils. Some marry or do worse and so become prematurely old; others pine and suffer from a host of nervous, dyspeptic and other ailments; and very frequently masturbation is adopted as the surest and most accessible relief. From being a vice, an infraction of sexual integrity and a corrupting of the moral sense, it often becomes an irresistible propensity, itself a disease as ineradicable as a cancer.

It is impossible to nourish a part properly except it is in a healthy condition. Every texture, every cell has in itself the appetite, the elective affinity, the property of attracting and selecting materials from the blood for its own growth and repair. It is therefore certain that if the cell or tissue is itself injured, in an unhealthy condition, or destroyed, it cannot assimilate nourishment, or at least do it properly. Hence we encounter so many diseases of texture which seem to resist effectually all the interference of art. We may perceive why it is that blows and other injuries, by exciting or diminish-

ing the vital properties of the textures, give rise to inflammations, tumors and other morbid growths.

In combination with all these operations, the influence of the nervous system is imperative. If this is impaired, no healthy growth or assimilation is possible. There is not an organ of the body which is not likely to be deranged or modified in function by conditions of the mind. Hope and confidence aid in the resolution of numerous diseases; fear and foreboding of evil aggravate the most simple maladies and often render dangerous ones fatal. The destruction of a nerve will cause the wasting of a tissue, and often its ulceration and total destruction. The same thing occurs when disease attacks the spinal cord or one of the ganglia of the sympathetic nervous system.

The operations of life are therefore comprised in nutrition and expenditure of substance. On the one hand, material is always passing from the blood to build up the tissues; on the other, matters are passing into the blood from those tissues which have fulfilled their peculiar functions. The new takes the place of the old, preserving the general configuration of the body, during the constant imperceptible changing. We cannot see the tissues forming in the adult, but may in the embryo. We are obliged to infer or guess at the process. But we cannot, even then, perceive the disintegration and absorbing. We are obliged to learn what we know of it from morbid processes. We perceive, for example, that pus-cells and cancer-cells break down and become fluid in the very inverse order to that in which they were developed. A fluid exudation issues from the blood-vessels, and coagulates in the form of *molecules* and *granules*. These unite to form *nuclei*, around which *cell-walls* are produced. In case this is their final point of development, they are again dissolved into fluid. The cell-wall melts first, and then the nucleus. The molecules and granules appear again. The fluid portions pass through the walls of the blood-vessels from without inward, and so enter the circulation. So all which was solid has become liquid, to pass again into the blood. This process is denominated *absorption*.

We do not witness it in health, but infer that it is analogous. We

suppose that particle after particle of solid matter is reduced to fluid and disappears to give place to new particles; and that these also become solid for a time, assume form, fulfill their functions and allotted period of life, are again dissolved, absorbed and excreted, as their predecessors were before them.

So we have two digestions. The blood receives matter from the primary digestion to build up the tissues and form the secretions; and likewise from this secondary digestion, to produce the excretions.

Chemists have not been very successful in their manipulations of the vital fluid. It is different in the two sexes, as well as from circumstances of diet, assimilation, respiration, personal habits, etc. The medium quantity is $84\frac{1}{2}$ pounds in a man and 26 in a woman. It is supposed to comprise one-fifth of the entire weight.

The constituents of the blood are the *plasma*, or *liquor sanguinis*, the *red corpuscles*, the *leucocytes*, or white corpuscles, and the *granules*. The plasma is a yellow fluid, slightly viscous, in which the corpuscles float, and the albumen, fibrin, fat and earthy salts are dissolved. It thus contains every substance necessary for the formation of the tissues and for the secretions. It is the essential material, the nourishing fluid, which is attracted through the walls of the capillary vessels by the tissues, to be employed, as elsewhere shown, in all the formative purposes of the economy.

The blood-corpuscles, though denominated red, are really of a saffron or amber color. Under the microscope they are transparent. It is only when they are grouped thickly together that they take their red hue. They give the blood its peculiar color and opacity. They are truly organized structures, containing nitrogenized and mineral elements, as well as a little fatty matter. They are constantly undergoing decay and are capable of generating themselves. They constitute about half the mass of the blood, and are but little denser than the plasma. It was supposed that they were actual cells having nuclei, a distinct organic substance; but this is not the case. The corpuscles have a tendency to range themselves in rows, like *rouleaux* of coin. This is because there exudes from each of them an adhesive

substance which glues them together. It is, however, not a phenomenon of the living blood, but takes place speedily after death. Their structure is very simple. They have no nuclei, nor granules, nor investing cell-wall, but are perfectly homogeneous. They are characterized by great elasticity, the power of osmosis, and the possession of a glutinous substance. They constitute the plastic material of the blood, and fit it for the purpose of nutrition of the tissues. In the circulation, they keep the capillaries open, so as to permit the passage of the arterial contents; they absorb oxygen in the lungs, and afterward give it off in the different parts of the body, and so maintain the animal heat. Their removal by hemorrhage, or bleeding, occasions asphyxia, such as slaughtered animals experience.

Thus the blood is a highly elaborated, viscous and complex organic liquid. It is the *blastema* from which the living molecules, nuclei, cells, and other elements of the tissues are attracting, by a kind of hunger, as has been shown, new matter to supply the place of what is lost; meanwhile, it is also all the time absorbing old matter which has already served its uses. We do not know how it brings all this material into use, which it derives from the *primary* and the *secondary* digestions. We comprehend that it is in constant motion, rushing rapidly out from the heart through the arteries; that it is divided into minute streams by the capillary vessels which permeate the *parenchyma* of the tissues: that it returns more slowly by the veins, completing this whole circuit in half a minute; that it is subjected to the constant collision of about two billions of semi-solid blood-corpuscles; that it is incessantly undergoing alterations when exposed to the peculiar action of every organ of the body—and all the while that it is imparting one or more of its constituent principles to the various tissues as it passes through them, it is at the same time absorbing those which have been worn out in the service of the economy.

In the circulation, therefore, the tissue-building and the tissue-dissolving principles are mingled. We must look there, accordingly, for an explanation of numerous morbid conditions which

derangements in so nicely-balanced an organic fluid is liable to produce.

Hemorrhage is perhaps the most mischievous agency for deranging the blood. Its effect is to greatly diminish the number of the red corpuscles, on which every function and organ so intimately depends. For many years it was the leading step in medical practice. Patients were bled on every occasion, in every condition, and for pretty much every disorder. The spare as well as the plethoric, the consumptive as well as the apoplectic, and especially pregnant women, were alike made to shed their blood to the medical Moloch. An old man like General Washington, an exhausted patient like Lord Byron, an overtaxed statesman like Count Cavour of Italy, in like manner lost their lives by this unwise practice. Blindness seemed to possess the entire profession. Never, perhaps, was the art of healing more destructive.

When all the constituents of the blood are abundant the condition is denominated *plethora*. When they are deficient the state is termed *anomia*. In inflammation the fibrine is largely increased, the cholestrin doubled in quantity and the albumen diminished. In fevers, exanthematous disorders, intoxication, starvation and purpura hemorrhagica, the albumen is diminished. Upon the checking of any secretion, its essential principles accumulate in the blood. In the following diseases the albumen is abnormally diminished in the blood, namely: Bright's disease, cardiac dropsy, and puerperal fever.

The blood sometimes clots in the vessels during life. This is liable when the circulation has become retarded, as on the slow approach of death. When a ligature is applied to an artery the blood will coagulate in its neighborhood, filling up the entire vessel. Sometimes these clots have formed in the cavities of the heart and extended into the large vessels. Whenever the blood is effused into the areolar tissue or any cavity of the body it generally coagulates, and is afterward softened and removed by absorption.

The chief office of coagulation is the arrest of hemorrhage. It never takes place in the organism except the blood is in an abnormal

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condition in respect to circulation. There is serious danger of injury in such cases. The impaction of portions after being broken up is likely to occur in distant vessels, producing *embolism*. When this occurs in the brain we have cerebral apoplexy; and the formation of clots in the heart is liable to prove fatal at once.

Concerning *toxihæmia*, or blood-poisoning, pathologists have been somewhat neglectful. Many diseases, some of which are the opprobrium of the medical profession, are due to this cause, more or less directly. Thus we have hospital poisoning, from putrid pus, commonly known as *pyhæmia*, or more properly *septicæmia*, nowadays accounted for by the "germ-theory," but still a moot question. Syphilis is perhaps more general, not only tainting the blood, perhaps ineradicably, of the individual, but inducing a permanent caco-plastic tendency in his remoter progeny. Scrofula, in its myriad forms and ramifications, is now prevalent over Europe and North America; and there is little doubt that it is the sequence of the prevalent syphilis which from 1495 till 1550 and later scourged the various countries, from Naples to Spain and France, then Saxon Germany, Poland and England, following into Hungary, Russia, Sweden, and finally into Swabian Germany. Erysipelas is perhaps more universal. Its virus comes from decomposing flesh; its virulency is hardly surpassed; and if it is not itself the one blood-poison from which the others take form, as we more than suspect, it certainly appears *de novo* when any of them are developed. Its types are myriad; and we find it not only with scrofula, but small-pox, phthisis, diphtheria, scarlatina, measles, rhus poison, etc. When it has once appeared, it betrays a strong tendency to manifest itself again at the recurrence of the season.

Venomous insects and animals also diffuse a virus or poison more or less deadly, which is capable of disorganizing the blood, and often of producing death. Chemists have declared that the poison of serpents and venomous insects was acid, and of similar properties. Analogy, however, indicates to us that it is in each instance, like the blood, peculiar to the animal from which it is secreted. How far the

deadly effects are due to quantity, or to the intensity of the poisonous principle in each instance, is the theme of important enquiry. The bite of the hooded snake, the cobra, is almost certain death. The Uraeus, or Sacred Asp of Egypt is little less deadly. The American rattlesnake is pretty certain to inflict death when his fangs wound a vein or artery. Fortunately the majority of the serpent tribes are not poisonous. If the venomous principle is acid, it is easy to perceive that a pungent alkali like ammonia would speedily neutralize it and arrest its ravages. But when the blood itself is tainted to any considerable extent, the disorganization cannot be overcome. The brain and nervous system are more or less paralyzed, and the shock on the ganglionic nerves is irremediable.

It is worthy of notice that the intensity of the poison is more or less affected by various conditions. Thus, snakes hibernate and are dormant or unconscious for long periods. They seem to be little venomous during and immediately after these intervals of torpidity. When, however, they have lain in the sun and acquired new force, they become dangerous. The excitement of anger in them also increases the deadly character of their poison.

Indeed the passions generally have a malignant influence in most animals. Anger is a potent blood-poison. Women nursing their children during a period of rage have thus put an end to their life. Fear disorganizes the blood. Much of the mortality prevailing during epidemics is due to this cause alone. Disappointed love will derange the nervous system, pervert the sensibilities, and disorder the digestive and respiratory systems. It is a frequent cause of pulmonary consumption. The bite of enraged animals not unfrequently produces convulsions and blood-poisoning. Even men and women, in moments of passion, have inflicted similar injury by biting. Hydrophobia, the puzzle of pathologists, is a disease created by intense nervous excitement. It has been attributed with much reason to erosio; dogs being exposed to the presence of the females and at the same time kept forcibly apart. The bite of the oestruating female is said to have occasioned hydrophobia in several known instances. The

bite of other animals, however, has been observed in numerous cases to occasion disorders of an analogous character. But if we should endeavor to trace the relation of cause and effect between disease and the imagination and passions, it would be an interminable labor. It is plain to the most unobservant that ill habits of mind, neglect of self-control, yielding to anger or any lawless impulse, enfeeble the vital force and predisposes to disorder. Insanity is only such disorder in some aggravated form.

Vegetable poisons are as potent in their way. We tread upon the province of the prescriber and apothecary when we instance opium, belladonna, aconite, hyoscyamus, strychnia, calabar bean, veratrum, gelseminum and the major part of the materia medica, perhaps. But it is certain that in quantities of any considerable amount they disorganize the blood and produce death. All that the physician endeavors to do with them is to employ doses so minute as to modify what he considers a morbid action, avoiding the toxic or poisonous effect of any considerable quantity. He can hardly be too careful or discreet. It is a remarkable and most forcible illustration of the potency of vital over what we denominate chemical properties that a drug like opium or strychnia, not materially differing in constituents from gluten or albumen, should be endowed with the power to arrest the action of the physical economy. What is not understood infinitely transcends all that we know.

Mineral poisons in their various forms are also destructive to the blood and tissues. The vapors of chlorine, carbonic oxide, sulphur, mercury, arsenic are familiar to all. Many of the minerals themselves are known poisons. Mercury, arsenic, antimony, lead, cobalt are noted for their potency and deadly character. A better knowledge of human science, of physiology and hygiene, and we trust better sense among physicians, is steadily impelling the more intelligent and conscientious to the rejection of these substances in medical practice. It would be a golden age made celestial to have a treatment of the sick in which poisoning by medicines was not a feature.

Attention has already been directed to the fact that the textures of

the body while assimilating and appropriating new material from the blood also give up to that fluid the particles which are effete and worn out. These are in a fluid form; but being more or less changed constitute the fibrine and a portion of the fat extractive matters and salts which appear in the *liquor sanguinis*. They are the result of the secondary digestion—the disintegration of the tissues; and being useless for the economy are separated and excreted.

A large part of this, as has been shown, is performed by the lungs. They exhale daily from six to twenty-seven ounces of water and from four to twelve ounces of carbon. Their importance as depurators cannot be exaggerated. The necessity of abundance of pure air, of thorough ventilation and cleanliness, should be insisted upon everywhere.

The liver stands sponsor for a large proportion of the disorders of which people complain. We will here remark that in many cases it is an unjust imputation. Most of them are not hepatic or bilious. It is a designation which has been adopted to answer the enquiries of ignorant people, if not also to disguise the ignorance of the physician. The office of the liver is to free the blood from the grosser elements which contaminate it. The portal vein which supplies it originates principally from the capillary vessels of the intestines; hence the blood contained in it abounds with fat, dextrine and sugar but is deficient in fibrine, which is a product of the secondary digestion. It accordingly will not clot firmly like blood in other parts of the body. The food which has parted with its better elements in the formation of chyle also gives off others for the production of the bile. The liver is the purifying organ for the chyle, the blood and especially of the *liquor sanguinis*. Its vessels, the biliary passages and ducts are as so many sieves for separating the various substances. It perfects the work of the spleen and pancreas in the preparing of the chyle; each of these organs transmitting to it the impure blood which they have encountered. So spontaneous is every operation in the liver that motion is almost imperceptible. The blood which is impure, unwholesome, effete and useless, is removed and trans-

mitted to the gall-bladder. This fluid has been curiously and not improperly associated with moral qualities. Ill-affected persons are denominated *bilious*; and the term *melancholy* in its etymological sense signifies *black bile*. As much of the bile is taken up anew into the blood, is it unreasonable that a peculiar depression of spirits should attend the infusion of a darker-colored fluid into the circulation? In morbid conditions such as are frequently accompanied by this state of mind the blood is sluggish, viscid, dusky and lifeless in its aspect.

The secretion of bile is affected by a great variety of influences. All causes that affect the blood are of this character. Indigestion, disease of the stomach, the obstruction of perspiration, fevers, poor food, etc., all are in this category. So too are mental disturbances, like anger, envy, anxiety, grief. Too intense application to study, indolence, the habit of brooding over misfortune or dark prospects, the regarding of evil rather than good in whatever is done or happens, sudden disappointment, all affect the blood unwholesomely and adulterate the bile.

The average product of bile is about 8 1-2 pounds daily. It consists chemically of water holding in solution various alkaline salts, and it is said copper, iron, coloring matter, mucus and fat. The coloring matter is five-fold; the salts consist of soda, potassa and ammonia united with the taurocholic and glycocholic acids. The fatty matter is cholestrin, which is essentially the fecal constituent. The orifice of the common bile-duct into the duodenum is smaller than the duct itself and is closed by the contraction of that intestine. When, however, chyme and fluids distend it, the orifice is thereby opened and the flow of bile facilitated. The major part of this fluid is absorbed into the blood and excreted from the lungs in the form of carbonic acid. The residue is converted into stercoraceous substance and excreted as such from the large intestine. Hence it is that the bowels after having been thoroughly emptied of their contents are presently found again to contain fecal matter; and in those diarrhœas designated feculent the quantity of matter voided is

noticed to be in excess of the food taken. The quantity of bile excreted from the intestines as fecal is more or less in proportion to the amount eliminated by the lungs. In warm weather, therefore, when the rarefaction of the atmosphere limits this amount, the intestines are taxed for its excretion; and hence originate the variety of complaints denominated bilious, choleraic, etc. The fatty matter not being properly removed often accumulates in the cells of the liver, creating what we know as *fatty liver*. The organ enlarges sometimes to a prodigious size. Lack of exercise and a heated atmosphere produce this condition. They diminish the respiration and thereby force upon the liver the function of disposing of the excess of carbon and hydrogen. This it is unable to do and so stores it up in the form of fat. The enormous livers, for which the fatted geese of Strasburg have long been famous, are thus produced. The disease also prevails in hot climates especially among Europeans. The lungs doing their duty imperfectly throw their burden on the liver, which accordingly pours an increased supply of bile into the duodenum, causing the symptoms commonly known as bilious. All persons spending a season in hot climates, and especially during the summer should be careful to adapt their diet to the amount of exercise they take and the vigor of the respiration. Carbonaceous, and especially oily food, should be avoided as well as alcoholic drinks.

The employment of medicine to promote the secretion of bile has long been a hobby among medical practitioners. Experiment has shown conclusively that it is a delusion. The fact that a cathartic causes bile to appear in the feces is not conclusive in regard to the secretion. It is known that a large part is usually transformed in the smaller intestine; and the purgative only forces it out before this takes place. It has done hurt in this rather than good. Whatever may be the utility of cathartic medicines the intelligent practitioner will never resort to them to enhance the supply of bile.

Mercury, accordingly, never increases it, nor exercises a beneficial effect on the hepatic function. The idea that it does, is one of the hallucinations of the practitioners, without basis in philosophy or

confirmation by experience. A committee appointed by the British Medical Association in 1866 to investigate the subject, employed two years for the purpose. The result showed that on no occasion whatever did mercury increase the secretion of bile. Whenever it impaired the health or produced purgation, it diminished the flow, but otherwise it had no perceptible effect. The same thing was true of podophyllin. As for taraxacum or dandelion, it was inert. All purgation drained the walls of the intestines and so diminished the secretion. Abstinence from food also lessened it ; but there was no relation perceptible between the quantity of food eaten and the bile, which indicated the amount to be excreted at any given time. Sometimes it was more and sometimes far less, with the same quantity, in apparently the same condition of health. Exercise always increased the flow for a time, because it created a pressure upon the muscles of the abdomen, expelling the contents of the gall-bladder. A strong contraction of the diaphragm and muscular parts surrounding the bladder compresses it and immediately causes a flow of bile. Deep breathing continued for some moments will do the same thing. But the gall-bladder has no muscular coat and therefore will not contract on the application of a stimulus. It would seem that this determination of the question by men eminent for scientific and professional learning ought to be sufficient. There is, however, no ground for hope of any speedy benefit. Medical practitioners are reluctant to learn and more so to change. The issue now in controversy will eventually be decided in favor of the people. Till that time these drugs must be permitted to ravage, except where there is purpose and intelligence sufficient to resist the authority of physicians.

The function of the kidneys and their appendages are next in the order of examination. They are glands constituted of cortical and medullary substance, having for their office the depuration of the blood from earthy matter, water and waste nitrogenous substances. They also, to a degree, act upon fatty or saccharine matters. The failure of the lungs to cleanse the blood of hydro-carbonaceous ma-

terial, imposes the task vicariously upon the liver ; and in like manner the delinquency of the liver transfers its burdens to the kidneys. It is not surprising that they are often diseased ; and, perhaps not, that such forms of disease have become more common of later years.

The medullary portion of the kidneys is constituted of tubes diverging outward from the lower region of those organs, dividing and becoming smaller. They are lined like other vessels with epithelium. The cortical substance consists of the *Malpighian* bodies, so called from having been described by Malpighi, and the *tubuli uriniferi*, which proceed from them. These bodies appear to be formed by an assemblage of capillary vessels coming from off the renal artery, and are not unlike bunches of currants in appearance. They are surrounded each by a capsule formed from the expansion of the end of the uriniferous tubule. We may perceive from this that the *Malpighian* bodies receive the water from the blood and pass it into the tubules which are lined by glands and epithelium. The ureters convey it to the bladder in the form of urine. This fluid consists of a large part of the water entering the body as drink ; also of refuse elements from the primary digestion and material produced by the secondary digestion, or disintegration of the tissues. Under a chemical examination it is found to contain about 97 per cent. of water, 1.1-4 of urea, 2.5 of uric acid, 1 of mucus, coloring and extractive matter and the residue of sulphates, phosphates, chlorides, hippurates and fluates of soda, potassium, lime, magnesia and ammonia. Its specific gravity varies from 1012 to 1030. It is very liable to become loaded with foreign substances, as blood, albumen, pus and sugar. Hence a careful examination of this fluid is important, and should not be neglected by the careful and intelligent practitioner.

The quality of the urine is intimately related to every mental, physiological and pathological condition. Its color is pale when very dilute, and high-colored when comparatively scanty. The disordered and excited condition of the nervous system produces a peculiar cast or complexion, which a skillful observer may easily

detect. The imperfect preparation of urea from the second digestion tends to create instead an undue quantity of uric acid, which not only produces rheumatic, gouty and neuralgic affections, but gives a high color to the excreted fluid. Studious persons are characterized by an increase of phosphatic and other salts, which are evidently the product of disintegrated tissue of the brain. Any urinary disturbance, even the neglect to void the secretion, will create more or less disorder in the head and particularly at the medulla oblongata. The food eaten also manifests itself by the urine. Articles of peculiar pungency are easily noted, like asparagus, terebinthine substances. Vegetable diet increases and animal food diminishes the volume of the excretion. It varies with every genus of animals, every age of life, with each sex, with temperament, habit of body, change of employment or weather, with diet or exercise, as well as with each specific ailment or disease. It is more or less suppressed in dropsy, fevers, malarial poisons, and is abundant as well as more or less crude, in indigestion and analogous conditions. In pregnant women a caseous and oily substance is eliminated; and in other instances more or less oleaginous matter may be found in this secretion.

Mental disturbances play their full part in the matter. A gloomy condition of mind increases the watery accumulation. Studious persons have more occasion to void the bladder than others. In hysteria there is often an apparent suppression, at least a suspension or overlooking of the requirement to discharge the burden; this may be corrected by plunging the hands of the patient into cold water. A shock upon the surface speedily reacts upon the kidneys; as indeed do most impressions on the sympathetic nervous system. Every cause imaginable, it will thus be perceived, will create changes in the elements, quantity and appearance of this fluid.

The principal office of the kidney is to separate urea and uric acid, two substances rich in nitrogen, from the blood. About an ounce of the former and 8 grains of the latter are excreted daily by a healthy man. Children excrete double the quantity. If oxygen and water enter abundantly into the arterial blood there is a greater proportion

of urea and carbonic acid formed from the albuminous elements; but in case a less supply of oxygen is had, the uric acid is more abundant, which is insoluble, hard to eliminate and therefore liable to create disorders in the body. In acute diseases this fact is specially manifest. The urine is loaded with urates. In pneumonia, pleurisy and large abscesses it constitutes an important element of the crisis. It is also a distinctive feature in fever, phthisis, active dyspepsia, suppressed perspiration, blows and strains in the loins and disorders of the sexual system. All disorders which produce rapid emaciation are so characterized. In gout the uric acid is formed in derangements of the primary digestion; in rheumatism from disturbances in the disintegration of the tissues. Hence in the latter disorder the application of heat is beneficial, as hastening the process and enabling the kidneys to remove the acid. Occasionally uric acid is deposited in insoluble form in the kidneys or bladder and gives rise to calculi. Whatever the various ingredients of these formations, the nuclei are generally of this character. When the excretory functions of the kidneys are disturbed, dropsy and uræmic poisoning are the phenomena most likely to occur. In the former case the water, not able to escape by the natural outlet, travels through the walls of the blood-vessels, producing anasarca or general dropsy. In uræmia, the symptoms are of a nervous character, as are incident in blood-poisoning. Convulsions and coma are most common.

The bladder receives the secretions from the kidneys and expels them from time to time. This is normally a voluntary action, a peculiar sensation dictating the proper period for the act. In inflammations of the neck, occasioned by quinia, gonorrhœa or inflammation, the call is made more often than in health. It is unsafe to neglect the matter. The omission eventually produces a suppression of the usual call; and the coats of the viscus are liable to reabsorb the contents. This would leave the salts and earthy matters more condensed and ready to crystallize. In this way calculous disorder may be rendered imminent; and the blood will at the same time be vitiated by the effete material again thrown

upon it. The skin attempts to relieve the body, and hence the peculiar urinous odor from persons in the habit of this peculiar neglect. Kidney disease of various kinds is also thus made liable; and dropsy with its pernicious accompaniments. The sexual apparatus is naturally and even necessarily involved in the general disturbance; and the disorders incident to aberration or suppression of the instinct, are sequences. The physician learns less about them; the patients are generally particular to direct his attention to other phenomena and symptoms. The disorders out of which certain practitioners make their harvest, *female diseases*, often originate in this manner. A glance at the structure and arrangement of the pelvic viscera will show this. The rectal extremity of the colon passes down next the spine. Immediately before it is the womb, which in a healthy, well-disposed woman, keeps its position and integrity of character, as though it was itself a sentient living being. The bladder occupies the foreground. While it receives the proper attention which it demands, it keeps its place, performs its office normally, and produces no disorder or disturbance in the neighborhood. But women are proverbially careless in matters of health, as well as often factitiously and fictitiously modest. When in mixed society, or engaged in some employment or fixed attention, they neglect for hours this imperative requirement. The viscus distends and finally enlarges itself permanently to accommodate itself to the state of affairs. The watery parts of the urine are more or less returned to the circulation, to be excreted by the skin, taken into the tissues, or placed elsewhere as it ought not to be. The kidneys succumb, and so a variety of complaints from this cause become an incident of womanhood. The enlarged bladder must have space. It cannot ascend into the abdomen; indeed, the peculiar fashions of female clothing would prevent that. It finds its way backward, lying upon the womb, and displacing as well as enfeebling that organ. We do not see how it can well be otherwise. It is not necessary now to go into detail in regard to the mischiefs which are thus occasioned. Such disorders are so common, so many practitioners make a bust

ness of treating them and the prevalence of them is so genteel and fashionable, that we have a literature on the subject as copious as on any department of real science. Gynæcology has taken dimensions, and has its books, periodicals, schools of practitioners, almost excluding from its domain all other medical, physical and pathological science.

The *supra-renal* capsules appear to pertain rather to pre-natal existence. They abound in lymphatic vessels, showing a close relation to the function of assimilation. After birth they change and finally become of little account.

The skin and its functions are too important to be passed over lightly. In its constitution it somewhat resembles the mucous membrane; consisting of a membrane of areolar and elastic fibrous tissue, lying like a close mesh-work over all parts of the surface. Beneath it is a layer of fat which protects it from injury and sheaths the internal organs. It is abundantly supplied with blood and nervous power; indeed it seems to be almost a network of nerves and blood-vessels alone. The ramifications of the nerves, with which it is furnished, constitute in fact a larger mass of nervous matter than is contained in the nerve-trunks from which they arise. So numerous, at the same time, are the blood-vessels that the finest needle cannot pierce anywhere without wounding some of them and drawing blood. The peculiar redness in bleeding also indicates the great vascularity of the organ. In surgical operations, the chief pain is inflicted at the skin, showing its extreme sensitiveness.

The *epidermis*, cuticle or scarf-skin, is a membranous layer everywhere laid upon the true skin. It is of a homogeneous structure and has neither nerves nor blood-vessels. It is composed of *epidermic cells* piled up all over the surface in layers of different thickness; being thin on the lips and flexures of the joints and thick where the parts are subjected to pressure. They issue from between the papillæ or follicles of the true skin, where they may be seen under the microscope in all stages of formation, as molecules, nuclei, cells. They are pushed out and so spread over the entire surface. Those nearest

the skin are fusiform, moist and have their walls soluble. But they undergo a change. Matter of a horny or cartilaginous nature is deposited in them and they dry away, becoming layers of scales over the entire body. Physiologists used formerly to regard the moist cells as pertaining to a distinct tissue, the *rete mucosum*, or mucous net-work. It was regarded as the seat of the coloring matter, protecting the true skin from contact with the rougher epidermis. But this opinion is not now generally entertained. The net-work of cells of which this coat was supposed to be constituted was found to be inseparable from the exterior scarf-skin, showing that it was no less than its inner surface. The cells of which it is constituted become in time the horny scales which compose the epidermis.

The skin is essentially an exhaling body. It is constantly excreting watery and fatty matters. Indeed the epidermis itself, the hair and nails which are modifications of the epidermis, are also in a certain sense, excretions. When they have grown to a certain extent, they become effete and fall away.

The sweat-glands are at irregular points under the skin. They separate various substances from the blood and excrete them through a tube upon the surface of the body. This tube consists of a firm membrane lined by epithelium and runs in a straight course till it reaches the epidermis, when it becomes spiral or twisted. These glands are most numerous in the palms of the hands and soles of the feet, suggesting care and punctuality in the ablution of those parts. Krause estimates the number at these points at 2736 per square inch; Wilson, at 3520. They are less numerous on the back of the hand, the face and neck; still less on the body and arms; and least of all on the back, where the number is set down at 400. They secrete the sweat, which is for the most part exhaled from the body in the form of vapor. But when from exertion or other cause it is increased in quantity, it is not readily evaporated and appears in the form of minute drops on the surface.

In health the sweat consists principally of water holding fatty particles in suspension and a small quantity of salts of soda, potassa

and lime. Its reaction is acid to test paper, but it becomes alkaline after exposure. During copious sweatings there is also a considerable quantity of urea and other nitrogenous matter, the elimination of which is the province of the kidneys. In disease there are also uric acid, glucose, albumen and biliary coloring matters found; and occasionally such medicines as iodine, potassium iodide, benzoic, succinic and tartaric acids are exhaled in this manner. The amount of sweat given off daily varies greatly; as much as five and less than two pounds having been observed. The cutaneous exhalation is thus more abundant than the united excretions of the bowels and kidneys. As the weather becomes warmer or colder the kidneys and skin alternate in the proportions of the work which they severally perform; most being excreted by the skin in warm and by the kidneys in cold weather. The quantity of perspiration increases after meals, during sleep, in dry warm weather and when the skin is stimulated. It is diminished when the atmosphere is moist or the digestion impaired.

There is an analogous relation also between the functions of the skin and those of the lungs. Animals covered with a thick varnish die from asphyxia. The lungs and right side of the heart are congested, and the temperature of the body sinks 86° F. It is probable that the composition of the sweat varies at different ages, and also on different parts of the body. The peculiarities of odor indicate as much. The arm-pits, groin, forehead, hands and feet perspire most readily, and receive for the purpose a proportionately large supply of blood. Checking of the perspiration is most detrimental to health. A bowel complaint, pneumonic fever, or inflammation of some internal organ, is very apt to ensue from cold applied to the skin, or continued exposure on a cold day. This is largely the result of retaining effete matter which ought to have been carried off by that organ. If the internal structure is entirely healthy, the additional labor is performed, and equilibrium presently restored; but in case of weakness of any, as of the lungs and kidneys, disorder is likely to ensue.

Burns and scalds, often of no great extent, prove fatal because of

the internal, generally intestinal inflammation which they create. The disorganizing of a large nervous and exhaling surface, occasions a great nervous commotion and the suspension of an important excretion. Baron Dupuytren expressed the belief that death would ensue when more than one-eighth of the surface of the body had been severely burned.

Others discover a peculiar sensitiveness when vinegar, or any diluted acid is applied to the body. It will even occasion convulsions and severe griping pains. Analogous results have ensued from substances taken into the stomach. Nettle-rash and other eruptions of the skin are produced by eating of shell-fish and other substances. Eczema, or vesicular eruptions, occur when Europeans first encounter a hot climate.

We perceive why eastern moist climates are unhealthy. There is a diminished evaporation from the skin, so that the outlet of the superfluous heat is partially shut up. The waste matter is as injurious as an active poison, and the fevers, colds, and dysenteries thus occasioned, are very well accounted for.

The sebaceous glands are also found in most parts of the skin. They secrete an oily fluid which is sometimes half solid, and of the character of wax. It seems to lubricate the skin and prevent it from chapping and scalding. It is removed by bathing, but the loss is speedily supplied. Dark-complexioned persons and the races inhabiting warm climates, appear to be most abundantly furnished in this respect. The ceruminous glands of the ears, and those peculiar to other parts of the body, which emit a distinct odor, are varieties of the sebaceous glands. It is probable that the scent of the secretion from these glands enables dogs to detect and trace the person emitting it.

It has been a debated question whether the skin possessed absorbent powers. The scaly epidermis, it is known, repels penetration in this manner. Deadly poisons applied to the surface rarely do much injury. Yet in many diseases, like diabetes, in spite of the great removal of moisture, the weight of the body is seldom proportionably

affected. Persons applying water to the surface have relieved thirst. The miasms of marshes are evidently absorbed in this way; so too are the effluvia of the dissecting room. The poison of the plague appears to be contracted in this manner. Putrid matters influence the body in this way rather than by the lungs. The application of oil to the skin appears to protect, so also does flannel. Even in the malarial district about Rome, those who wear woollen clothing enjoy great immunity from intermittent fevers. In moist climates we also notice a fulness of habit indicative of a predominant lymphatic system. All these considerations lead to the conclusion that in dry climates exhalation from the body is most active; while in moist climates the same thing is true of absorption. Hence the more dry and spare bodies of those living in a dry atmosphere; and the full habits of those who inhabit moist climates. Dampness facilitates the action of the absorbent vessels; so also does friction. Many substances which would be incapable of entering the pores, are absorbed by mixing them with some oily substance, and employing active friction. This causes them to enter the sebaceous and sudoriferous ducts, from which they can be absorbed more rapidly than through the epidermis. But as a rule, inoculation of poisons can only be effected by first penetrating this membrane and bringing the substance into communication with the capillaries.

The excretion by the large intestine is normally about 1-6 of the weight of the food eaten. It consists of the undigested aliment, mucus from epithelial disintegration, and various secretions which have come from the liver and other glands. Phosphates and other earthy matters are found. It is supposed that after the small intestine has finished its action and discharged its contents by the ileo-cæcal valve into the large intestine, a further "chemical" change is effected. There is an acid liquid secreted there, and the substances, before of a fluid consistency, assume solidity. Under the microscope, the fecal substance is found to contain the husks and cell-walls of vegetable aliments, the ducts of plants, portions of tendon, ligament and muscular fasciculi. Fatty matter and crystals of cholestrine

from the bile are not uncommon. Starch is largely cast out, owing to defective methods of cookery which prevent its assimilation. This shows the mistake of nurses and others in feeding infants and invalids with starchy substances, like tapioca, arrow-root, rice, etc. All the products of diseased action of the body are found in the fæces; blood, pus, lymph, cancer, parasites. All these would be thoroughly disintegrated if the digestive function was in normal and active condition. Even tape-worm itself cannot live in healthy digestive fluids. Of the five ounces of solid matter daily expelled from the intestines of a healthy man, about forty-two grains are nitrogen. According to Liebig the true fecal matter is the product of imperfect oxydation or histogenetic elements of the food while undergoing metamorphosis, preparatory to assimilation. There is no putrefaction in a state of health; the peculiar odor being from transformed bile. Offensive discharges seldom proceed from food; colliquative diarrhœa, the most disgusting of any, is the sequence of exhausting disease.

The disorders of this function are of various kinds. We have constipation, diarrhœa, tenesmus, dysentery, cholera, lenteria, and the unnatural color of the evacuated matters. Iliac passion is a more dangerous form. It proceeds from a mechanical obstruction of the intestine. The result may be an antiperistaltic action, forcing the contents of the tube backward even into the stomach. Animals are subject to this disorder.

The impairment of the nutritive function is the cause of numerous pathological conditions. It has been common among medical writers to impute many of them to the blood. But the changes in the constituents of the blood, and the diseases accompanying them are secondary. The primary cause is elsewhere, and should be sought by the medical practitioner. Indeed, we are not partial to the classifications which are made of diseases and morbid conditions. A more thorough knowledge of physiology will show that disease is a pathological condition, taking peculiar form from the

external influences which control the matter. It is a disturbance, an incidental variation from normal health, and little else.

The sympathetic, ganglionic, or vaso-motor nervous system, we are of opinion, is the source from which most physiological and, of course, morbid action originates. The glands and blood-vessels are almost entirely subject to its control. The simple disturbance of circulation, known as *congestion*, or over-distension of the blood-vessels, especially the capillaries, is due to some shock or injury of these nerves, or irritation of the textures. It may be temporary; but if long-continued will give rise to more formidable troubles. When it is caused or accompanied by excitement of the nervous system, it produces *fever*. If this has been produced by some poison introduced through the blood, it is called *primary*, and may be *intermittent*, *remittent*, or *continued*. If it is produced from injury to texture or reflex action, causing internal inflammations, it is styled *secondary* or *symptomatic*.

When the congestion is caused by mechanical obstruction to the flow of blood through the veins, the serum transudes through the walls of the capillary vessels into the parenchyma and collects in various places, causing *dropsy*. If it is generally diffused in the parenchymatous tissues it is called *anasarca*; if limited to the chest, *hydrothorax*; if to the brain, *hydrocephalus*; if to the peritoneal cavity, *ascites*; if it is local it is denominated *œdema*. Its remedy, if any, is to be found in restoring the veins to activity to carry on their part of the circulation efficiently.

Sometimes the capillaries are ruptured from being over-distended, and the blood is extravasated into the tissues. This is *capillary* or *congestive hemorrhage*. A disease of the coats of a blood-vessel, or a wound, will be followed by extravasation.

Active congestion, when it becomes excessive, is liable to terminate in the exudation of the liquor sanguinis through the coats of the vessels. This is *inflammation*—a state distinct from congestion or fever on one hand, and from dropsy or processes of growth on the other. This exudation undergoes a variety of changes, producing

various morbid conditions. When the liquor sanguinis, in a normal condition, infiltrates the neighboring tissues, or collects in a serous cavity, like the thorax or abdomen, it coagulates and undergoes transformation in one way or other as follows: 1. It will form cells and fibres, and constitute an adhesive lymph as is often done on the surface of serous membranes. 2. It will evolve *pus-cells*, and so constitute *suppuration*, as on mucous surfaces and in areolar texture. 3. It will develop granule-cells, and form *inflammatory softening*. 4. It will form various tissues, fibrous, vascular, bony or cartilaginous. It will thus be absorbed, evacuated externally by discharge, or assimilated to the body. In this way abscesses are formed, wounds healed, divided tendons and bones united, etc.

But when an exudation undergoes none of these changes, but assumes a yellow or grayish aspect, and a cherry consistency, it becomes *tubercle*. If it is disseminated in small grains, it is denominated *miliary*, but if in considerable masses, *infiltrated tubercle*. When chronic, it may be *encysted*, or present the form of a *calcareous mass*.

When an exudation passes into cells and fibers, the former increasing endogenously, it is denominated *cancer*. If hard or formed of fibers from associated morbid growth, it is called *scirrhus*; if soft, and yielding a milky juice on pressure, it is *encephaloma*; if it has a fibrous basis, and contains a glue-like matter, it is termed *colloid cancer*. When the exudation is poured out in such quantity as to paralyze the nerves and obstruct the blood-vessels, it dies and undergoes putrefaction. This is *gangrene* or mortification. It is sometimes apparently epidemic. When the exudation presses upon the surrounding parts, obstructing the flow of blood in them, the death of the parts takes place. They slowly disintegrate, and an ulcer is formed. The weight of depending parts, or the pressure of a foreign body will have the same effect.

When an organ or structure is enlarged, the case is styled *hypertrophy*; the thickening of membranes is denominated *induration*. When the calibre of a tube or duct is thereby diminished, it is

stricture. The vital transformations of an exudation into pus, granule or other cells, constitute a kind of morbid growth. The healing process, giving rise to new tissues resembling those previously existing, as in cicatrices, callus, etc., are vital transformations. Sometimes the morbid growths take the form of *tumor*.

There is also *atrophy*, or diminution of texture, *albuminous degeneration*, *fatty degeneration*, *pigmentary degeneration* and *mineral degeneration*.

Concretions also occur in the body of non-organized bodies. These are generally mineral deposits, or aggregations of matter, and are most often found in the cavities, ducts and hollow viscera. They may be formed from albuminous, fatty, pigmentary or mineral structure; but are distinct from degenerations in that they have not been formed from an organic structure. Urinary concretions are from the salts in the urine which have been precipitated around a central body or nucleus. Biliary concretions or gall-stones are formed of inspissated bile or cholestrine; the latter being white and the other dark-colored. Intestinal concretions are composed of bodies that have been swallowed and accumulated around a central nucleus. *Mineral concretions* are composed of carbonates and phosphates of lime, and are common in the mucous passages of various organs, especially the salivary, pulmonary, pancreatic, hepatic and renal. They occur also in the veins.

Such are the principal organic diseases. When the structure of the organ is not affected, but the normal action is principally affected, the disorder is termed *functional*. The causes are to be sought in increased or diminished stimulation upon the tissues, increased or diminished excitability of the nervous system operating upon them, in an altered condition of the blood, or in transformation of texture. These causes may act separately or combined, and one may occasion the other.

The NERVOUS SYSTEM is the source of all vital phenomena. We live by virtue of its integrity; we perish when it becomes incapable of its office. All the functions which we have enumerated are maintained

solely from this beginning and cease when communication with it is interrupted. The lungs will not respire, the heart will not pulsate, the blood will not flow, the glands will not absorb or secrete and the digestive apparatus will become dormant. It is not enough to tell of thought being suspended, the mind rendered incapable of action or of directing the movements of the body. We hold at secondary value the common references to the nerve-centres as the source of manifestations. By these are meant the brain and spinal cord. Animals having no vertebral column, no brain and spinal cord, have nevertheless a nervous system with functions and faculties. As that system may exist without the cerebro-spinal axis, and is manifestly anterior to it, the conclusion is legitimate that it is the agent primarily of vital phenomena.

This primary nervous system is denominated *sympathetic*, *ganglionic*, *organic*, *tri-splanchnic*. As a general rule we employ the first and second of these terms; our principal reason being to avoid confusion.

The sympathetic nervous system consists principally of *ganglia*, containing numerous nerve-cells and communicating with each other by one series of connecting nerve-tubes, and with the cerebro spinal nerves by another. These ganglia are usually classified as consisting of 3 *cervical*, 12 *dorsal*, 3 to 5 *lumbar* and 3 to 5 *sacral*. In addition to these are the two *semilunar* ganglia, three or four *celiac* and one *cardiac*. There are also the *ophthalmic*, the *spheno-palatine*, the *otic* and the *submaxillary* ganglia, and likewise the *cavernous* and *naso-palatine*. There are also two others which are not usually recognized as such; namely, the *pineal gland* and the *pituitary gland*.

The structure of these ganglia is different from that of the cerebro-spinal system. They present a soft, spongy tissue, somewhat resembling that of the lymphatic glands. The mass of the ganglia is composed of a *plexus* of nervous filaments, with a quantity of gray *neurine*. A thin body of areolar tissue surrounds each, and a *lamella* or vascular membrane analogous to the *pia mater* which envelops the brain.

Each of these ganglia is a distinct nervous centre and controls certain functions of the body. Dr. O'Reilly has determined their functions by repeated vivisections, as follows:

The pineal gland regulates the functions of the brain, and by arresting its action induces sleep.

The pituitary gland regulates the nutrition and other physical functions of the brain.

The carotid ganglion regulates the force of the circulation through the arteries of the brain.

The lenticular ganglion protects the function of the eye, so as to meet the requirements of the mind.

The otic ganglion is essential to the function of hearing, and regulates the action of the *tensor tympani*.

The sphenopalatine ganglion presides over the whole matter of eating, including salivation, mastication, deglutition—also drinking to allay thirst which arises from the presence of oxygen in the blood in excess.

The superior cervical ganglion presides over the function of the intonation of the voice, and also certain muscles to which it supplies branches. It also has some concern in the action of the heart. *Veratrum* seems to influence the function of this ganglion.

The middle cervical ganglion governs the action of the thyroid glands, several muscles to which it sends nerves and also takes part in the movements of the heart.

The inferior cervical ganglion regulates the motions of certain muscles to which it sends branches, and also the mammary glands.

The cardiac and pulmonary ganglia regulate the action of the heart and lungs.

The semilunar, the hepatic, the diaphragmatic, the splenic, the gastric, the renal and the mesenteric, preside over the secretion of gastric juice and bile, the action of the diaphragm, the secretion of urine, the action of the small intestine, and the function of absorption by lacteal and lymphatic vessels.

The spermatic ganglia preside over the secretion of semen.

The vertebral ganglia superintend the contraction and relaxation of the muscles.

All these ganglia hold communication with each other, and the nerves derived from them are distributed over the body and connected with those coming from the cerebro-spinal axis. Thus there is a complete interlacement and inosculation of both sets of nerves all over the surface of the body.

In hydrophobia, the spheno-palatine ganglion is morbidly affected. This ganglion sends nerves to the muscles employed in deglutition and likewise to the arytenoid muscle. Hence, the secretion of the peculiar saliva, the spasms and death ensuing from the non-admission of air into the lungs. Venomous reptiles operate by the agency of this ganglion.

Respiration, circulation and digestion are functions common to all animals, vertebrate and invertebrate.

The nerves accompany the arteries to all the muscles and viscera. The supposition that the *pneumogastric*, or *par vagum* nerve, controls these functions is an error. That nerve may be divided without stopping either of these functions. Dupuytren could discover no morbid change in the lungs of a dog on the side on which it had been tied. Magendie observed that the muscular movements of the stomach continued after the cutting of that nerve; hunger was also experienced and digestion took place.

The contraction and dilatation of the iris of the eye, also of the heart, the arteries, the stomach, the intestinal tubes, the diaphragm and the womb, are all due to the action of the nerves of the ganglionic system.

The pineal gland, it is acknowledged, has not been classified with nervous organisms. Des Cartes, the philosopher, was ridiculed because he conjectured that it might be the seat of the soul. He was as near truth as error, to say the least. In the experiments of Du Petit, the cutting of the superior cervical ganglion produced constriction of the pupil of the eye; and indeed, that organ shrunk in size. These are results incident to the irritation of the pineal gland. The

communication of the several ganglia is the explanation. A person may labor under chronic hydrocephalus, having his mental and vital faculties apparently unimpaired. There is no pressure of the gland or ganglion in question. But in case of meningitis, the gland suffers from irritation. The inflammation crowds the contents of the skull, and the serum effused presses upon the ganglion. The glistening of the eyes, and contraction of the pupils, indicate the nature of the disturbance. The suffering of the ganglion is communicated to the other ganglia, impairing vitality through the entire sympathetic system, and finally extinguishing life altogether.

An injury may be inflicted on the head, even severely wounding the brain, but so long as this gland is intact, there will be apparently no injury, either to the vital faculties, or to the intellect.

A blow directed to the pit of the stomach, will destroy life through violence to the semilunar ganglion, which is immediately communicated to the other ganglions, destroying life in them all. A blow on the cardiac ganglion will destroy life in the same way. A blow on the upper cervical ganglion will produce death or suspended animation. A blow on the centre of the forehead, will cause either death or suspended animation in consequence of the shock communicated to the pineal gland.

In the invertebrate animals the several glands are occasionally so distinct that each is an independent nervous system. The animal may be cut in pieces and each piece live by itself.

"Now as to the sympathetic nerve," says Mr. Quain, "so far from being in any way derived from the brain or spinal cord, it is produced independently of either, and *exists*, notwithstanding the absence of both. It is found perfectly formed in acephalous infants, therefore does not arise mediately or immediately, from the brain; neither can it be said to receive roots from the spinal cord, for it is known to exist as early in the foetal state as the cord itself, and be fully developed, even though the latter is altogether wanting. It appears that whilst the organs of vegetation and life are being formed, the sympathetic nerves are produced concurrently

with them ; and that as the growth of these parts proceeds from the circumference to the centre of the whole body, from its lateral parts to the median line, the sympathetic nerves also conform to the general law."

Nerves belonging to the sympathetic system are given off and surround the arteries, extending to their various branches and remotest extremities. At these extremities, they take the form and appear to perform the functions of glands. This is indicated from the fact that the blood in the smallest artery is arterial, and venous in like manner in the smallest vein. In leaving the artery then, the blood gives off its oxygen and becomes venous. This point, therefore, is the place of the generation of animal heat ; it being a familiar chemical law that the union of oxygen with any substance is attended by the evolution of heat. Electricity is also developed where heat is produced.

In running, circulation is rapidly increased. As a result, respiration is hurried, and the blood loaded heavily with oxygen. The results are burning heat of the surface, and great thirst. If drink is taken, it is rapidly absorbed into the veins, carried to the lungs, and thence to the heart and arteries. The electricity decomposes the water as it leaves the arteries, the hydrogen of which unites again with oxygen in the blood forming water, which now makes its way to the skin as perspiration.

When silver nitrate has *been taken* for a long time, these arteries and glands become contaminated with it; the venous blood carries the silver to the heart and lungs, where it receives oxygen. On returning to the heart, the blood is sent thence to all parts of the body. When the oxygen is absorbed at the glandular terminations of the arteries, the silver is also left there ; and on the deposit of a sufficient quantity, it becomes on exposure to the light, an oxide of silver which gives the skin a peculiar color.

As at the termination of the capillary artery and the commencement of the capillary vein, the blood ceases to be arterial, and becomes venous, and secretion also takes place, *it is evident that a*

secretion organ intervenes. This organ or gland is formed of the termination of the artery and the commencement of the vein, and excretory duct, together with the nerves, which have extended from the ganglion along the coat of the artery.

The pulmonary artery is in like manner surrounded with veins from the pulmonary ganglion. These are continued on all the branches of the artery to the capillaries, where they form glands. Through these glands the blood must pass to reach the pulmonary vein.

These glands are in close communication with the air-cells, which are analogous to the pores of the skin. They communicate with the inhaled air, and so the analogy is still more complete; for the glands in the skin are in communication with the air from without. As soon as the air comes into contact with the organic glands in the air-cells of the lungs, the glands are stimulated and give off electricity. This causes the oxygen of the air to unite with the blood and arterialize it. The heat thus evolved also produces electricity by which the carbon and hydrogen are expelled.

The blood is second in importance only to the sympathetic system. It is the current of life. It carries oxygen to the glands and furnishes material for the renovation of the various organs, under the influence of the vital action of the ganglionic nervous system.

Oxygen takes rank next. By its union with the glands and blood, as before shown, the operations of life are manifested,—respiration, circulation and animal heat. The cessation of respiration is attended with the suspension of animation, and death. Vigorous respiration is accompanied by increased action of the heart, and a higher temperature of the surface of the body. Whatever weakens the respiration, weakens the action of the heart and reduces the temperature. As respiration is the effect consequent upon the evolution of vital energy or electricity by the pulmonary glands, it follows that whatever depresses or excites the sympathetic nervous system, weakens or strengthens respiration.

We notice this exemplified in medical treatment, also in shocks

from fall or other injury. A patient laboring under fever and difficult breathing is often relieved by drugs of a *depressant* character. The circulation is reduced and there are modified symptoms. It is because the lungs have been rendered less able to take in oxygen; and so the venous character of the blood is less changed. Patients so treated never recover strength rapidly.

A man struck at the pit of the stomach or on the superior ganglion of the neck will fall to the ground, animation being more or less suspended. The shock given to the ganglion is communicated to the pulmonary, as well as to the other ganglia, and the result is an inability to evolve vital force, to unite the oxygen with the blood. The inhalation of ether or chloroform will paralyze the pulmonary ganglion. A man falling from a height will be found apparently lifeless, the countenance pale, respiration imperceptible, the pulse feeble if not entirely gone and the surface rapidly becoming cold. The shock in this case has involved the entire sympathetic system; the pulmonary glands are unable to act and life is suspended for want of oxygen. In case of immersion under water, a like effect is produced.

Death ensues from exhaustion because the pulmonary gland cannot evolve vital force to oxygenate the blood. In the event of hemorrhage, the glands endeavor even convulsively to support life, but the supply of blood is cut off and animation is thus suspended.

The inosculation of the nerves of the sympathetic with those of the cerebro-spinal system has been mentioned. As a sequence there is a constant reciprocity of action between them. When grief or anxiety harasses the mind, the sympathetic system participates in the trouble. There is a painful sensation in the region of the heart and more conspicuously an oppression felt at the pit of the stomach. All this is the result of the communication between the pineal gland or ganglion and the branches of the pneumogastric nerve, which inosculate with the branches of the solar plexus and the cardiac plexus.

Upon the hearing of bad news the pineal gland receives the shock and communicates it to the semilunar ganglions, the cardiac and pul-

monary ganglia, to the renal and spermatic ganglia. The effects are palpitation of the heart, suspended animation, loss of appetite, involuntary evacuations. A pregnant woman is very liable to abort or miscarry.

A copious secretion of saliva takes place when a hungry person comes in the vicinity of attractive food. The lachrymal gland will pour out a copious supply of tears on the occurrence of any event causing grief. The breasts of the mother fill with milk at the appearance of her babe after a brief absence. The nipples of a woman will dilate and enlarge at the approach of the man whom she esteems. A piece of bad news will make the face turn pale. A disgusting story or spectacle will induce vomiting. Disturbance of the mind by the rapid shifting of objects in sight will also cause the stomach to contract and expel its contents. All these phenomena result from the intercommunication of the cerebral nervous system with the sympathetic.

Pneumonia or pneumonic fever is occasioned by great depression of the sympathetic nervous system, generally from exposure to cold. Reaction occurs, and is soon followed by irritation, which establishes itself in one side of the lungs. When cold has affected a part for some time, the reaction will enlarge the capillary arteries, increasing the supply of blood and oxygen at the place. The nerves endeavor to relieve themselves by throwing off the offending matter in the form of lymph and pus. Thus we have *phlegmon*.

The application of animal poison to the glands at the extremity of the capillaries, is followed by excitement of the nerves, enlargement of the vessels, larger flow of arterial blood, and increase of temperature. The parts are endeavoring to expel the poison by the effusion of lymph and pus. Syphilis, vaccinia and analogous disorders have this mode of diffusion and action.

Contagion and malaria enter the lungs, and poison the whole sympathetic nervous system. Typhus, typhoid and intermittent, owe their inception to the inhalation of decaying vegetable or animal matter. Phthisis is accompanied with a poisonous emanation from the

lungs and surface, capable of infecting others. Erysipelas, hospital gangrene, and puerperal fever are disseminated from noxious principles in the atmosphere. They cause depression of the sympathetic system, followed by excitement and the various other symptoms.

The sympathetic nervous system is not under control of the mind or will ; but is acted upon by it under unusual circumstances. When the internal organs are the seat of disease there appears to be pain, even severe. The filaments of the cerebro-spinal system passing through the ganglia and inosculating with the nerves are probably the explanation. The ganglia, however, not only receive and distribute impressions coming from and sent to the cerebro-spinal "nerve centres," but they are nerve-centres themselves, and especially centres of numerous reflex acts in non-voluntary muscles.

In addition to this *excito-motory* function, the sympathetic system is, as we have shown, *excito-secretory*. It acts upon and influences the glands, as well as the blood-vessels and nutrition generally. It has little effect on wounds of the lower extremities to cut the crural and sciatic nerves, but injury to the ganglia of the sympathetic is sure to exercise the most destructive influence on the nutrition of the part.

Cutting of the sympathetic nerve will cause paralysis, relaxation and congestion ; and we may thence infer the disorders produced by any impairment of its functions.

Fevers begin with a feeling of cold followed by an increase of heat, indicating irritation and then paralysis of the sympathetic system. In inflammation, there is also a lesion of the *excito-nutrient* or *vaso-motor* nerves, which causes an exudation from the blood vessels. In cholera, there is a prolongation of the cold stage ; hence the pallor and blueness of the surface, the congestion and enormous discharges from the gastric and mucous membranes. These examples may be multiplied, but enough has been shown to prove the almost general agency of disorder in the sympathetic system of nerves in inducing disease. It shows also, that the numbering and classi-

fyng of diseases cannot be much depended upon ; we have to deal rather with derangements and morbid conditions of the economy.

It follows then, to adopt the words of John Hughes Bennett, that the functions of the sympathetic system are : 1st, *Excito-motory*, thereby regulating the contractions of the non-voluntary muscular fibres; 2d, *Excito-secretory*, whereby the various secretions are governed; 3d, *Excito-nutrient* or *vaso-motor*, operating more especially on the blood-vessels, and thereby regulating the circulation in the capillaries, and the amount of animal heat.

It is manifest, therefore, that we have not exaggerated the importance of this nervous system in the vital economy.

The cerebro-spinal axis, however, has most attracted the attention of physiological students and explorers. This system includes the *cerebrum*, or larger brain, the *cerebellum* or lesser brain, the *corpus callosum*, *corpora striata*, *optic thalami*, *corpora quadrigemina*, *pons varolii*, *medulla oblongata*, and *medulla spinalis*. All these are encased in the skull and spinal column; and by virtue of this endowment the animals are denominated *vertebrates*. The skull enclosing the upper extremity of the cerebro-spinal axis, is after all, upon close examination, but an extension of the vertebral column. A rivalry existed between the surgeon-poet, Goethe, and the naturalist Oken, as to which was the first to remark it. It was original with both, and appears to have taken place almost simultaneously.

That the essential life, the biological principle, is manifested in the great sympathetic nervous system, has been distinctly asserted and set forth. But the cerebro-spinal system is the organ of a superior vitality, dependent on the other for a basis and existence, but transcending it in scope and powers. By virtue of it men see, hear, feel, think, reason, attain to intellectual conceptions and moral faculties; in short, are made capable of becoming spiritual, rational, moral beings. Whether, however, any race except the human possesses this capacity is more than doubtful. The various vertebrate animals appear to typify the human ideal, but not to attain it.

The substance of which the brain is composed is denominated

neurine. There are two forms of it, the gray or ganglionic, and the white or tubular. A close examination of the gray matter shows it to be abounding with blood vessels, and to consist principally of molecular matter, in which are embedded nuclei and nucleated cells, of different sizes and shapes, connected together by nerve-tubes of various calibre. The white matter is essentially tubular, and less vascular than the gray. Some of the tubes run into the corpuscles of the gray substance and others originate there. Every ganglionic cell in the gray matter receives and gives off these nerve-tubes, each having distinct properties—the one of conveying impressions to the nerve-centres and the other of carrying influences from them.

The brain is largely and equally supplied with blood by the *basilar artery*, which is formed by the junction of the vertebral arteries and the internal carotids. The branches of these arteries form a most remarkable anastomosis known among anatomists as the *Circle of Willis*.

The cerebrum appears to view covered with the gray matter, which has been very properly designated the *hemispherical ganglion*. It presents on the surface numerous breaks, ridges and furrows or *sulci*; by means of which a large amount of matter is capable of being contained in a small space, and a great surface may exist in a limited region. In the other contents of the skull the gray matter exists in masses, and constitutes a chain of ganglia at the base of the encephalon. These are more or less connected with each other and with the medulla spinalis. In this part of the structure the gray matter is internal and the white nervous substance exterior, reversing the order in which it is found in the skull.

The white tubular substance of the spinal cord is divided into three columns on each side. The anterior and posterior *horns* of gray matter and the anterior and posterior sulci on each side are the divisions. The posterior columns constantly decussate through the length of the cord. The others ascend the vertebral columns to the *medulla oblongata* and these decussate with each other.

The posterior column passes to the cerebellum ; the others enter the other portions of the brain and finally are lost in the white substance of the cerebrum. So there is direct nervous communication between the various bundles of tubes, the gray matter of the spinal cord, the spinal cord and the brain itself, and between the spinal cord and the nerves of the body.

The cerebrum itself has also bands of transverse tubules which bear the name of commissures, and connect its two hemispheres. The anterior and posterior lobes are connected in like manner. It therefore is connected in all its parts, and joined intimately with the other portions of the cerebro-spinal axis. It has also been ascertained that the tubes of the nerves are connected, and indeed actually terminate in the gray matter of the spinal cord. The nervous actions are transmitted by these tubules running in different directions. Many of these are usually denominated *reflex*, but this is a misnomer. They are direct, passing and operating through the spinal cord, and are therefore *diastaltic*.

The difference in structure between the gray and white nervous matter has led to the opinion that they perform different functions. It is believed that the gray matter evolves nervous energy, and that the white conveys to it and from it the influences that are sent thither or originate there. It is not supposed to be without the power itself of originating, but *conductivity* is believed to be its chief function.

The brain, it is certain, furnishes the conditions necessary for the manifestation of the intellectual faculties properly so called, of emotions, passions, volition, and sensation.

It has been observed in the animal world that there was a very exact correspondence between the sagacity of the animal and the quantity of the gray matter, and the depth of its convolutions. In young infants the gray matter is deficient ; there can hardly be said to be any convolutions, but only superficial fissures to indicate their place. As this substance increases, the mind and intellectual faculties become developed. It has been observed on slicing away the

gray matter from the brain of animals, the result was dullness and stupidity. In diseases affecting the brain, those beginning at the surface and proceeding toward the centre, affect the mental faculties first ; whereas, in diseases commencing at the centre, the mind is last to be affected.

The white tubular matter conducts the influences originating in the hemispherical ganglion to the nerves of the head and trunk, and they in turn convey them up to the cerebral convolutions. The fibres which connect the two hemispheres of the cerebrum, doubtless serve to combine the mental faculties for the production of thought.

The gray matter of the spinal cord, is connected with all the motor nerves, the nerves which obey the will. It is in larger masses at those places of the cord where the large nerve-trunks are given off. The lower part of the cord also has a far larger proportion than the upper part. It is also collected in the lower animals, at the points where nerves are supplied to organs requiring a large quantity of nervous power, like the electrical fishes. Where the central portion of the cord is affected previous to the external portion, an individual retains the power and sensibility requisite to moving the limbs. But he cannot stand, walk, or keep himself erect, especially when the eyes are shut. If the disease begins at the *meninges* of the cord, or externally, the first symptoms are pain, twitchings, spasms, numbness and even paralysis. All these, it is hardly necessary to explain, are results of the lesion of the white conducting matter.

The *nerves* of the body consist of nerve-tubes running in parallel lines. They are indeed fascicles or little bundles of fibres, often of different function and office, surrounded by a common envelope designated *neurilemma*. Some of these, however, contain ganglionic corpuscles, as the olfactory, and the ultimate expansion of the optic and auditory nerves. The sympathetic nerve not only contains ganglia at various places, but gelatinous flat fibres. There is a ganglion also at the posterior roots of each of the spinal nerves. These roots are connected with the posterior horn of gray matter in the cord, while the anterior roots are connected with the anterior horns.

There are five classes of nerves, as enumerated by physiologists: 1. Nerves of *Special sensation*, as the olfactory, auditory, optic, lingual and pharyngeal nerves. 2. Nerves of *Common sensation*, as the fifth pair and the glosso-pharyngeal nerves. 3. Nerves of *Motion*. 4. *Sensory-motor* nerves, where both kinds are included in one sheath. 5. Sympathetic nerves—already explained as constituting essentially a distinct nervous system.

There are also nerves whose functions are not included under these heads. The sensation of tickling, the perception of cold and heat, the consciousness of pain, the sense of weight, the perception of sex, are distinctive and are probably conveyed by distinct tubules.

Sensibility is a peculiar property inherent in all nerves, in virtue of which, when they are irritated, a something is produced which we call an *influence*, that is conducted in various directions, according to the peculiar function of the nerves affected. Some carry the influence in one direction, some in another. Some nerves can be excited only by one kind of irritant, others by another kind. The nerves of common sensation will be excited by all kinds of mechanical irritants; the optic nerves are excited only by light and the auditory nerves by sound. If the influence is conveyed to the brain, various sensations are produced; if to contractile parts, we have various kinds of movements; if to the glands, varied sensations; if to the tissues, varied alterations in growth. The nerve, unlike a metallic conductor, generates as well as conducts its peculiar influence. Sensibility however analogous to physical phenomena, is nevertheless broadly distinct from them. It is only to be recognized as a characteristic of living beings and therefore as being essentially a vital function.

The rapidity of the nerve-current is largely affected by temperature. It is increased in the motor nerve as the latter approaches the muscle. The velocity of impressions does not appear to be as great as has been supposed. Probably it is not greater than 150 feet per second.

Sensation is properly defined as the consciousness of an impression; and it requires for its production a stimulus applied to a sensitive

nerve, an influence generated in consequence and conveyed along the nerve to the hemispheric ganglion and the action of that faculty of the mind denominated perception or consciousness. It may be destroyed by any circumstance which disarranges either of these operations, the destruction of the sensibility of the nerve, the impeding of the process of conducting the impression or the unconsciousness of the mind. Examples are familiar to every body.

Motion is performed through the agency of muscles endowed with the peculiar vital property designated *contractility*. They are endowed with this property in the same way that nerves are endowed with sensibility. This function may be called into action by agencies independent of the nerves, and also by physical or psychical stimuli operating through the nerves. Pricking, pinching, galvanism, etc., will induce convulsions. The will and certain emotions will call the contractile force into action. Integrity of the muscular structure is sufficient for contractile movements; but the spinal cord and brain must also be in normal condition to instigate and direct them.

The functions of the brain as a psychical and mental agent and organism have engaged the study of metaphysicians and physiologists for two thousand years. It was usual formerly to refer these to the *viscera*, notably to the "nobler intestines." In the Assyrian *Tablets* the heart and the liver are indicated as the seat of emotion. The Hebrew Scriptures are forcible in delineating the heart and the reins. In grief the bowels were represented as making a noise as from disturbed action. The reins were disquieted. Sensation, emotion and affection are imputed to the heart. Thus Dr. Noyes renders *Jeremiah* xvii: 9, 10, where the figure is employed

"The heart is deceitful above all things;
Yea, it is corrupt; Who can know it?
I, Jehovah, search the heart
And try the reins,
To give to every man according to his ways
And according to the fruit of his doings."

Galen seems to have been of opinion that the brain rather than the viscera, represented the mind and its emotions. Plato also declared that the understanding, which is the most sacred part of man, is in the head. But modern investigators, who claim that science must be mathematical and exact, have been very dilatory in their investigations of the subject. The pathology of insanity is little known. Many who would pass for scientists are contented with giving to phenomena certain names and then treating the names as actual explanations. But they are seldom diffident or moderate in denouncing those whose researches have not been after their method, or with like results. Psychology as the term is used by medical men is a misnomer. As scientific it is superficial ; and indeed it is only remarkable for not relating to the soul.

It may be considered as certain that the gray matter, the cortical layers of the brain, furnish the conditions which are necessary for thought, and all mental operations. Dr. Thomas Brown classified mental phenomena as the *external affections* and the *internal affections*. Under the former he included the sensations ; under the latter the intellectual and the emotional states. The intellectual states comprise simple and relative suggestions ; the emotional, the passions and desires.

It is more convenient however to divide the mental faculties into three kinds ; the purely *intellectual*, the *sensations* and *volition*. The prominent intellectual faculty is *consciousness*. This constitutes our *ego*, the idea and conception of our own existence. Influenced in various ways, it causes, evolves, and inspires the other mental faculties. If directed to the present it is *perception* ; if to the past, it is *memory*. If it suggests the ideal, it is *imagination* ; if applied to thought synthetically, it is *generalization* ; if analytically, it is *reasoning*. If it originates ideas intuitively, it is the faculty of *original conception*.

The sensations are *physical* and *mental*, the former are *touch*, *taste*, *smell*, *hearing*, *sight*, the sense of *weight*, the sense of *temperature* and the sense of *sex*. The mental sensations are love, hate, desire, aver-

sion, hope, fear, joy, sorrow, audacity, despair, courage, etc.,—also self-love, vanity and the moral faculty, the sense of right and wrong.

Voition is the faculty of will. The affection known as will or inclination is doubtless the primary principle ; its energetic action is, however, best known under that designation. Will formerly denoted the inclination of the mind ; it now means its purpose. Directed to the muscles it produces *voluntary motion* ; to the senses, *attention* ; to the thought, *abstraction* or concentration of ideas.

Under this classification, it will be seen, all cerebral function relating to mental operations, is fully comprised. The endeavor has been made, however, with great plausibility and we think very good reason, to arrange the mental and cerebral faculties under specific divisions. The science or method has received the designation of *phrenology* ; and its inception and order must be credited to Drs. Gall and Spurzheim of Germany, and Dr. George Combe of Scotland. Their first efforts were of necessity empirical ; but in the minds of a large proportion of our reading population, the results are mainly correct. We have never been quite assured of the soundness of all their propositions, and our respect for them suffers materially, because phrenology, perhaps like the practice of medicine, is taught rather as a trade than as a science.

The brain, in this arrangement, is duly mapped out into regions. The basilar, comprising the cerebellum and adjacent parts, is assigned to the *selfish propensities* and includes such functions as *amativeness*, *philoprogenitiveness*, or love of children, *inhabitiveness*, or home-love. At the sides of the head are the regions of *selfish sentiments*, which are indeed pretty decidedly also propensities ; such as *alimentativeness*, or appetite for food, *destructiveness* or disposition to destroy or put aside from sight and mind whatever is repugnant, *vitativeness* or tenacity of life, *combativeness* or disposition to contend, *secretiveness* or disposition to hide and guard, *acquisitiveness* or passion for accumulation. In the front are the *intellectual faculties*, embracing

the frontal lobe of the cerebrum ; of which those beneath are denominated *perceptive* and those above them *reflective*. The former are *individuality* or the power of knowing external objects ; *form*, by which we take cognizance of forms ; *size*, by which we perceive dimension ; *weight*, enabling us to estimate weight, density, resistance, etc. ; *color*, the power of perceiving colors ; *locality*, the faculty of local memory ; *order*, the love of methodical arrangement ; *time*, the faculty that enters into speculations on duration ; *tune*, the perception of musical tone ; *number*, the power of calculation ; *language*, the faculty of learning artificial signs of ideas ; *eventuality*, or memory of events ; *mirthfulness*, or perception of the ludicrous ; *imitation*, or the faculty to perceive and imitate the peculiarities of persons and objects.

Under the head of *reflective faculties* are *causality*, the power of tracing cause and effect ; and *comparison*, or the faculty by which we recognize likenesses, differences and analogies.

The top-head in which Plato located the more spiritual, diviner entity, is very appropriately set apart to *moral* and *religious sentiments*. We have *veneration*, or the faculty to venerate and worship ; *marvellousness*, the disposition to believe ; *hope*, the tendency to expect better things ; *firmness* or determination, *conscientiousness* or the disposition to be and do right ; *cautiousness*, or care to avoid peril ; *self-esteem*, or satisfaction with oneself ; *approbativeness*, or vanity, or passion for the favorable regard of others ; *benevolence*, or kind disposition ; *ideality*, or the faculty to perceive and imagine the good and noble ; etc.

It is true that a person with lofty head is characterized by the noblest qualities that are possessed by men. A prominent forehead denotes the faculty of observation, study and research ; a broad skull over the ears indicates cruelty ; a heavy backhead, a sensual temper and strong will-power. But there are exceptions as marked as the rule ; and we are compelled to adopt the conclusion that the localization of the faculties has not yet been properly accomplished. The data have been carefully arranged, and appear very ingenious as

well as injurious ; but the great majority of facts educed by physiological and pathological research, do not support phrenology. The future may do better ; we apprehend phrenology has had its day.

The *cerebellum* is materially different from the cerebrum in structure. It is composed of white tubular neurine at the centre, bounded by a granular layer, outside of which is a row of nerve-cells with branches extending toward the molecular layer which constitutes the exterior. The texture is evidently molecular, containing numerous capillaries derived from the vessels of the meninges. Hence meningeal inflammation always involves the functions of this brain. Diseases of the cerebellum, such as extravasations of blood into its substance, softening, tumors, tubercular deposits, are accompanied by paralysis or convulsions. They are very violent frequently when the lesions are trifling, and slight when the whole or the greater part of the organ has been completely disorganized.

According to Dr. Gall, the cerebellum is the seat of the sexual instinct ; perhaps, but in cases where the organ was atrophied, there appeared no diminution in that respect. The same remark must be made in regard to the statement that it is the organ of co-ordinated motion. Though a large backhead generally is accompanied by active sexual impulses, the sign is physiognomical as far as we know, rather than functional.

The ganglionic bodies known as the optic thalami and *corpora striata* are however very closely related to this function of co-ordination of motion. In the event of disease on one side, hemiplegia occurs on the other side of the body. The sense of sight and faculty of sensation are also affected.

The *optic tubercles* or *corpora quadragemini* appear to have like relations to the sense of vision. Their removal paralyses the *irides* of the eyes ; as in fact do lesions of the optic tracts, the cerebellum or the optic thalami. Wounding will also be followed by convulsive movements.

The *medulla oblongata* appears, however, to be most essential to

life. It is the centre from which proceeds the necessary power for maintaining the co-ordinate movements of respiration and deglutition. Here occur also the decussation of the anterior and middle columns of the spinal cord, to which is attributable the crossed action of lesions of the cerebral lobes—apoplectic extravasations, softenings, etc., of the right hemisphere of the brain, causing hemiplegia of the left side, etc. Destruction of the medulla oblongata causes sudden death ; but the removal of the entire brain-substance alone does not. The vertebral portion of the spinal cord may also be removed up to the phrenic nerve, without destruction to life. But when the medulla is injured life and respiration cease at once. Hence skilful hangmen, it is said, endeavor to cause dislocation of the first or second cervical vertebra, so as to cause immediate death.

In modern classification, all the contents of the encephalon, except the *cerebrum*, are denominated the spinal cord. The vertebral portion differs materially in structure from the cranial. The latter has been described and a cursory notice taken of the former.

The anterior roots of the spinal nerves are motor, and the posterior roots sensitive. In disease of the gray central substance, the power of combining or co-ordinating movements is lost. This is *progressive locomotor ataxia*. Sometimes this affection is combined with atrophy of the muscles. It is a consequence of sexual excess, especially of masturbation. Diseases of the membrane enveloping the cord induce pain, spasms, tetanus, etc.. A section of one-half the vertebral cord will produce epilepsy.

The cerebro-spinal system has a therapeutics of its own. Such remedies as tea, coffee, opium, chloral act on the cerebral functions to excite or diminish them. Strychnia, hemlock, calabar bean and tobacco excite or diminish the spinal functions. Cold, alcohol, hydrocyanic acid act on both. Some of these substances, it is well known, are antagonistic of others. Coffee will antidote opium ; calabar bean is adverse to atropia, and chloral will suspend the spasms and preserve life after fatal doses of strychnia and the calabar bean.

The cerebro-spinal nerves as enumerated by Willis consist of 9 cerebral and 31 spinal pairs of nerves. All the cerebral nerves, except the *olfactory*, may be regarded as belonging to the cranial portion of the spinal cord. The *olfactory* contains both gray and white matter, and so is rather to be considered a ganglion than a nerve. Its function is to produce the special sensation of smell.

The second pair, the *optic* nerves, receive and transmit the influence of light. A portion of the filaments are decussated, so that the influence is given at once to both sides of the body.

The third pair are the motor nerves of the eyeball, which regulate the principal movements of the eyeball. When irritated the result is spasm of the muscle and dilatation of the pupil. Their division produces strabismus or squinting, paralysis of the *levator palpebræ* muscle, so as to keep the eyelid closed over the eye, inability to turn or lift the eye, and paralysis of the iris.

The fourth pair, the *trochlear* nerves are also motor, and govern the *trochlearis* or superior oblique muscle of the eye. Division of this nerve produces double vision; one object being apparently placed above the other.

The fifth pair, the *trifacial* nerves are among the most important of all the cranial nerves. They divide into three branches, two of which are purely sensory and one motor-sensory. The branches of this nerve blend and inosculate with those of the eighth and ninth pairs, and also with the branches of the great sympathetic. The sensitive branches terminate in the face and communicate sensibility to the skin, various organs of the head, and to the external parts of the several organs of special sensation. It is the great excitor nerve of those parts. Injury to it will blur the eye, dull the sense of hearing, affect the smell and taste; and also interfere with the various secretory and nutrient functions. An irritation or slight disease of this nerve will give rise to that severe pain known as *neuralgia*, and that violent form called *tic douloureux*. This is almost invariably caused by disorder of the stomach and yields when that is corrected. A division of this nerve or destructive disease causes a paralysis of sensi-

bility of the face exactly defined by a line drawn through the middle of the forehead, nose, mouth and chin. The prick of a pin will give no pain, sternutatives in the nostril will not be felt, food placed in the mouth on the affected side gives no idea of its presence. In the endeavor to drink, the vessel will seem to be cut away at the part to which the paralyzed lip is applied.

The jaws are also supplied from the non-ganglionic branch. The disease of the teeth will occasion excruciating pain, often extending and affecting the nerves of other teeth, and the side of the face. If the motor nerves are also paralyzed, the muscles which move the jaw find it difficult to perform their office, and mastication is impeded. The individual can chew only on the healthy side, as the action of the masseter and temporal muscles is also more or less affected. There is distortion of the countenance or loss of command over expression; which, indeed, appears to be governed rather by the sympathetic nerves. The jaw however is a little depressed. But this form of paralysis seldom exists alone. It is associated with hemiplegia, and also with the palsy of the *facial nerve*; in which case the whole side of the face is paralyzed.

So closely is this nerve associated with the nerves of special sensation as to have induced the supposition that all the special senses were dependent on the integrity of the fifth pair. This is not quite true; but it is certain that these nerves are necessary to facilitate secretion in the mucous membranes; and the obstructions from the drying of their surfaces and consequent inflammation, ultimately destroys the senses of smell, sight, hearing and taste. Hence too great care can scarcely be taken to preserve the fifth pair of nerves in health and integrity.

The sixth pair, the *abducent*, are motor, and govern the motion of the *rectus* muscle of the eye-ball. When it is compressed, divided or disorganized that muscle is paralyzed and the eye turned outward.

The nervous power required to maintain the sense of vision is thus suggested. The apparatus is the most complex perhaps in the body; and the function one of the most important. The great sym-

pathetic has a special ganglion, the ophthalmic, to maintain the vital force. The *trochlearis*, *abducent* and third pair are all provided to keep the muscles, lids and eyeballs themselves in place and subject to the slightest impulse of the will. The optic nerve exercises the sense of light, and branches of the fifth pair supply that exquisite sensibility which enables the brain to receive instant impressions and so act rapidly upon them.

The privation of the sense of vision by reason of blindness, results in throwing the nervous energy upon the general system. The blind display more passional tendencies, are more ungovernable in temper, easy to acquire habits of drunkenness and sensuality. Much may be attributed to morbid hereditary tendency. Few are born blind whose parents have not sinned. The vice of licentiousness is perhaps the principal cause. We discourse of scrofula; but it is often but the harrowing sequence of the other. Persons made blind from such inheritance are likely not to be otherwise favorably organized. But the nervous force provided for the eyes, by so many nerves, if not so employed, is diverted into other channels and will manifest itself accordingly. The physician and the pathologist will do well to bear this in mind. The treatment of the blind should be intelligent.

The seventh pair of nerves is double in function and actually should be classed as two distinct nerves. One of them, the *facial nerve* is motor, and governs the movements of all the muscles of the face. We have already shown the effects produced by paralysis of this nerve. The expression of the face is lost; the mouth is oblique, and the paralyzed side appears hard and smooth, the eye enlarged and the lids open. The muscles moving the jaws are still obedient, because their nerves are from another source. The lips are paralyzed and sometimes let saliva and food escape from that side of the mouth. Words containing labial letters are imperfectly pronounced. Expectoration is awkward.

The other nerve, the *auditory*, is the agent transmitting sound to the brain. Its extremity is expanded into a membranous network in-

vesting the entire internal ear ; so that the vibrations of the air impressing the tympanum, and transmitted by the ossicles of the middle ear, are impressed upon the auditory nerve and transmitted to the brain.

The eighth pair has in like manner, three branches ; the *glossopharyngeal*, a nerve of sensibility distributed to the pharynx and root of the tongue ; the *par vagum* or *pneumogastric*, and the *spinal accessory*, a nerve aiding respiration, controlling the *sterno-mastoid* and *trapezius* muscles, and regulating the action of the larynx. If divided in the cranium, the voice is lost ; showing that this nerve rather than the *vagus* or pneumogastric regulates phonation.

The pneumogastric nerve is both motor and sensory. Its branches are numerous and its functions diversified accordingly. It also anastomoses freely with the sympathetic system, and so contributes to the vital as well as other operations. Its branches extend to the pharynx, the larynx, the cesophagus, the lungs, heart, stomach and diaphragm. In case of lesion of one of the pulmonary branches of this nerve, little effect is noticed ; but if both are cut, severe asthma and dyspnoea ensue. The lungs become congested and the bronchi filled with serous fluid. A paralysis of the nerve or any interruption of its action is likely to produce similar results. A division of the gastric branch will produce vomiting and loathing of food and retard the digestive process. The contractions of the stomach are also weakened, but as the semilunar ganglion of the great sympathetic rules the organ, the secretions are not affected.

The ninth pair of nerves, the *hypoglossal* is the motor of the tongue.

The 31 pairs of spinal nerves are senso-motory, as has been already explained. They also inosculate with the branches of the sympathetic ; and are distributed to the several organs of the body nearest that part of the spinal column where they have their origin.

The diseases incident to abnormal and interrupted nervous action are classified by the parts specifically affected. Those incident to the cerebral lobes are *insanity*, *apoplexy*, *trance*, *irregularity of motion*.

and *headache*. Under the head of insanity we have partial insanity, including *monomania*, *impulsive insanity*, *moral insanity* and *hypochondriasis*; and *general insanity*, divided into *mania*, *dementia* and *amentia*.

Spinal disorders include *spinal irritation*, which gives rise to an endless number of morbid conditions. 1. *Tetanus* or tonic contraction of the voluntary muscles, of which we have *trismus* or lockjaw, *opisthotonos* or contraction of the muscles of the back; *emprosthotonos* or contraction of the muscles of the neck and abdomen, and *pleurosthotonos* where the muscles of the body are affected laterally. 2. *Chorea* or irregular action of the voluntary muscles when stimulated by the will. 3. *Hydrophobic* irritation and partial paralysis of the pharyngeal muscles. 4. *Spasms* and *convulsions*. 5. *Hemiplegia* or paralysis of half the body. 6. *Paraplegia* or paralysis of either side of the body.

Cerebro-spinal disorders include affections of both the brain and spinal cord. Among those are *epilepsy*, *cataplexy*, *hysteria*, *eclampsia*.

Neural disorders include *neuralgia*, *angina*, *colic*, *irritable testicle*, *vaginismus*, *irritable womb*,—also irritations of the nerves of special sense, those of the nerves of motion, and local paralysis from whatever cause.

The pathological causes of nervous disorders are enumerated as of four kinds; congestive, structural, diastaltic and toxic.

Congestive derangements are most common. The skull, for example, can hold only a specific supply of blood and any accumulation must necessarily operate abnormally by pressure upon the nervous tissue. Accumulations in the arteries and veins have the tendency to irritate or suspend their functions. Doubtless the brain and spinal cord are often affected by congestion, when the fact is not demonstrable after death. The emotions and passions, plethora and anemia, unaccustomed stimuli, uterine derangement, all produce congestion and general disturbance. In *coma* there is an accumulation of the blood in the arteries and arterial capillaries and a corresponding compression of the veins. In *syncope* the veins and venous capillaries

are distended. In each case pressure is produced on the brain. Syncope differs from coma only in the feebleness of the action of the heart. The cause producing loss of consciousness, sensation and power of voluntary motion is the same in both. It is sometimes hard to distinguish one from the other.

Partial congestion may occur in one hemisphere of the brain, or some part of the spinal cord. Functions may be excited or suspended; the function of one part of the nervous system may be exalted and that of another suspended. In epilepsy the cerebral functions are for the time annihilated and the spinal functions violently excited. The various phenomena of hysteria and spinal irritation are also to be explained in a similar way. We are safe in attributing to congestion the most of the functional disorders originating in the cerebro-spinal axis.

Structural derangements of the nervous system are not uncommon. Effusion, extravasation, exudation, morbid growths and degenerations of texture are of this character. Hemorrhage is indicated by suddenness of attack; acute exudations by local pain and fever; chronic exudations and tumors by gradual perversion of the mental, sensory and motor functions. Intelligence suffers in proportion as the disease affects the hemispherical ganglion, or gray nervous matter of the cerebrum.

Reflex or rather diastaltic derangements are the harder to ascertain. Traumatic tetanus, the convulsions produced by teething, the gastric disorders of infants are examples.

Toxic derangements are numerous and not unfamiliar. Alcoholism stands at the front. It first excites and then paralyzes the mental faculties. So does opium, and so do all the pure narcotics. Ether, chloroform, and their associates must be included. Opium acts on the cerebral lobes; belladonna on the corpora quadrigemini. Tea and coffee excite the cerebral functions.

Strychnia excites the motor filaments of the spinal cord, producing tetanus, etc. Woorara produces just an opposite effect, causing paralysis and flaccidity of the parts. Conium paralyzes the motor and

sensory spinal nerves, producing paraplegia, beginning at the feet and creeping upward. The favorite mode of capital punishment among the Athenians, in the later years of the republic was, by the administration of this drug.

Hydrocyanic acid produces epilepsy. Cold excites the spinal functions and stimulates to diastaltic activity, but will finally produce drowsiness and stupor.

Mercury occasions irregular muscular actions. Lead causes numbness and palsy, especially in the hands. Stramonium is a sedative to the nerves of the bronchi. Aconite, veratrum, digitalis, paralyze the action of the heart, and if too long continued produce disorganization and coagulation of the blood.

This description can be continued till it includes pretty much the entire *Materia Medica*.

These subjects are capable of a more extended illustration. The purview of the physician properly includes the whole field of nature. He is compelled too much to circumscribe his attention to phenomena and those of a morbid character. The criminal lawyer and peace officer are prone to regard everybody as delinquent. The physician is too familiar with them as diseased. He should be philosopher and scientist; whereas he is too often little more than an empiric and a mechanic.

Perhaps on no subject have physicians been more in the dark than in regard to the constitution and actual offices of the nervous system. They are so fond of reasoning by induction and from the standing-point of evolution, that they are voluntarily, if not wilfully, shut up against any other conception. It is unwise to hamper the mind in so narrow bounds. A man actually animalizes, almost bestializes his nature by such a course. Those who deny a soul having existence beyond bodily limitations, seem very often to be living illustrations of their own theories.

Yet how the impulse of life, growth and development can be supposed to exist without the operation of some pre-existing law of form to direct it, is to us unimaginable. We acknowledge that

"exact science" cannot explain it; but it nevertheless has a being. It is none the less a fact because it transcends the scope of human conception.

The mental and intellectual functions of the brain have been mentioned. Reference has also been constantly made to the nervous influence or energy, which makes every organ, fibre and other part of the body perform its office. But the nature and constitution of this peculiar energy has not been duly set forth. It is a potency, as we all know. But it is inappreciable by the rules laid down by those who treat of science as exact. It has not been weighed, measured, defined, or brought within the scope of the physical sciences. It is above all these and, therefore, to a great degree, incomprehensible by them. Nevertheless it is an entity, a potency, and a fact transcending phenomena. We must logically consider it as an actual substance. It is the very material of the life, and produces those phenomena which we call vital. However credulous it may appear to declare this, it is a more extreme credulity to disbelieve it. The real entities are often those which a materialistic philosophy is impotent to explain and therefore eager to deny.

The accumulation of this substance is attended by vigor, vivacity and courage; its exhaustion by fatigue, languor, indifference. It is acquired by rest and exhausted by action. A strong will enables the production of phenomena which are marvellous, but none the less real. The potency denominated *faith* has changed physical conditions. The patient who means to recover or who believes that his physician has the power to treat him successfully generally recovers. Those who yield are pretty sure to die or to convalesce very slowly. A severe shock to the mental system is as deadly as to the bodily structure. Phthisis prevails most among populations where there is little hope. Hence more women than men die of consumption. The same thing may be said of hysteria. It is a fallacy to be guided in diagnosis by phenomena. The complaint is nervous, purely because the highest bodily organism is nervous. The hysterical patient is not so affected because of this organ disarranged or that one abnor-

mal, but because the mind craving activity in directions which fill up the thought and affection, is turned back upon itself in hopelessness and disappointment. Both epilepsy and hysteria seem to diffuse a contagion. One hysteric patient is likely to have several around. An epileptic will be simulated by scores.

All agencies which deeply impress the mind react upon the nervous system. Ecstasy is one form; mesmeric somnambulism is another. Catalepsy is a sequence of hysteria, religious excitement, or any agency that renders the motor nerves inactive. Sleep shows that every one has the tendency; dreams, illusions, hallucinations are all forms of thought, where external consciousness has been more or less silenced. It is idle to attribute so much to the imagination. A mental or moral agency has as much reason for being potent on a human being or animal as a drug. We understand one just as well as we do the other.

There are many causes in operation at the present time to increase sensitive and morbid conditions of the human body. Society is becoming more and more unsettled. The Anglo-American peoples have been characterized by their love of social ties. Home-sickness gnaws the very vitals of men. With the financial revolutions in constant action, home-life is becoming more and more impossible. The love of family and domestic life is sapped. More of our populations live unmarried, or if married, in relations in which domesticity is abrogated. As a result, vitality is impaired.

"As our civilization becomes more complex," says Dr. Folsom, "as our capacities for enjoyment intensify, so is the keenness of our suffering sharpened, so do the requisites for moral, mental and physical health become more numerous; and, unless a sound education gives us a correspondingly greater knowledge of that wonderful mechanism, the human body, diseases of all kinds must increase."

The occurrence of epidemics shows great neglect of hygienic and sanitary precautions. People who have little interest in living, have little public spirit, and are wilfully as well as voluntarily careless. Yellow fever and cholera are natural sequences to such a state of

things. So are a host of other maladies. If we divert one pestilence others become more deadly. If vaccination has abridged small-pox, it has intensified and quadrupled mortality from scarlatina, diphtheria and consumption.

Medical men ought to be counsellors to their patrons, rather than prescribers for their ailments. They should seek to obviate rather than to treat disease. They should be above the temptation of practicing on the credulity of patients. The people cannot dispense with them; their counsel and aid are needed. Disease would be shorn of much of its formidableness if the wise advice of a physician was had in time. It should be the aim, therefore, to render the calling, what it should be, a *learned* profession.

HYGIENE.

EXCERPTS

UPON THE

PRESERVATION OF HEALTH.

"When I ponder on the wealth of human happiness which lies folded up within this subject, I am tempted to call on the student to leave his learning, the philosopher his science, the clergyman his theologies, and first teach men to obey God's laws in their physical frames, how to glorify him in their bodies as an accompaniment, if not a first requisite, to glorifying him in their spirits."

Of the importance of the science of health there can be no doubt. Everybody wishes to be healthy, and everybody, when they think of it, at any rate, wishes to avoid such things as might bring them disease and suffering. How to preserve the health is not, however, so clear. For the most part men live in ignorance of those laws of health by which their actions should be guided; and if we are asked how we should act under certain conditions, or whether such and such a state of things is an unhealthy one, many of us are unable to answer the question. One reason of this is the complicated and

changing nature of the requirements. For instance, a man who lives under one set of physical circumstances will have to obey one set of laws of health; whilst men living under different circumstances will have to observe quite other laws in order to be healthy. The Indian, roaming over the prairies, has to look out for altogether different dangers from those which surround those who live in crowded cities, where, perhaps, one thousand persons, in some districts, live on an acre. That the science of health is really less developed and less known than many other sciences lies, then, in the fact that it is more complicated than these other sciences, and a little reflection will show you why this is so. Thus we see that enormous effects are produced from very minute causes; and that this is the case not only when we catch a fever, or a particular disease, without being really able to tell how we have caught it, or being able to assign to it any origin whatever; but we also find that this often holds good when we know that we are introducing a disease, as, for example, by the vaccine lymph, which, when introduced into the blood, though it be but the smallest particle on the point of a needle, produces a very extraordinary change on the human body.

If we look back we find that in the olden time, whenever disease and epidemics broke out and spread over the country without apparent cause, the people attributed these afflictions to the visitation of God, or in heathen countries to the work of some offended deity; and even now, in our times and in civilized countries, we find people who ought to know better wearing charms against certain evils, fancying that they will keep away disease. The first idea, then, we must get rid of in our investigation as to matters of health is this notion that disease is brought about by something indefinite and intangible, something which we must call upon the spirits of darkness or the spirits of light to deliver us from.

We have learned with regard to the epidemics of olden time that they were most felt, and the mortality was always the greatest, amongst the poor, the dirty and the degraded portion of the population; as a rule these people suffered more than did those whose

circumstances enabled them to live in a better way. The conclusion is therefore that these epidemics are in some way assisted and abetted by dirt and degradation, and that improvement in the condition and habits of life of the people either does avert or lessen the virulence of these outbreaks of epidemic disease. This is shown by a vast number of facts. In 1869 a most severe outbreak of yellow fever occurred in the large city of Buenos Ayres and the Brazils; and on investigation it was found that the sanitary arrangements of that city were of the lowest and crudest character; that they had no drains, but only enormous cesspools which were never emptied, and under their tropical sun became festering masses of pollution and impurity.

In an inquiry as to the cause of production of any disease, we may take it for granted that the material causing the disease must be brought to the individual either in the water we drink, or in the air we breathe, or in the food we eat. I am not speaking now of what are termed "hereditary diseases," which are of a totally different character, and do not come into the class of those which can be removed by sanitary improvements. Applying this principle to the case of cholera, as being one of the best investigated of epidemics, we find that the poisonous matter which is the cause of this disease is very frequently, at any rate, taken with the water that is drank.

An instance is that singular case known as the Golden Square case. In the course of five or six days, from the 30th of August, 1854, not less than about five hundred persons died of cholera in a district in London, around Golden Square, containing about five thousand inhabitants. Upon investigation it was found that nearly all the people who died had been drinking water from a pump in Broad street, which was thought to yield very excellent water, but was afterwards found to communicate with a cesspool in an adjoining house. This case clearly proves that contaminated water may produce cholera.

Take what is known as typhoid or enteric fever. This disease is generally supposed to be caused either by drinking impure water, or

by breathing foul gases generated in sewers; and it is said that twenty thousands die annually from this preventible disease. The preventible nature of this disease is so generally acknowledged that when an outbreak of typhoid fever occurs in a hospital the medical department direct their attention at once to the condition of the drains.

In the first place let us clearly understand that neither the chemist nor the physician, nor the microscopist, nor the physiologist, can tell us whether the water contains typhoid poison, or whether the water contains cholera poison, or whether the water contains the poison of any other particular disease. There are no means of ascertaining this, even with the most poisonous exhalations from the cholera patient except it be the actual test of the action of the poison on a human subject. The microscopist cannot detect, for instance, in the rice water from a cholera patient that there are any particular germs of cholera poison in that offensive liquid, and yet if the smallest quantity of it should get into the digestive organs of a man it would produce cholera. But, although the chemist is unable to do this, he is able to tell the difference between a pure water and a water which contains animal impurity; and if the water contains cholera poison, or the germs of typhoid, or of some other disease, or simply animal excrementitious matter, it is unfit to drink; and the chemist can help us to detect such matters.

All animal matter makes a disagreeable smell when it is burnt. The difference between burning a feather and burning a piece of wood is evident to our senses. Now, this burnt feather smell is caused by the presence of a body which the chemists call Nitrogen, which exists in the air, but which also enters as a characteristic ingredient into all animal matter. In this respect animal bodies differ from the bodies of vegetables. Now, when the decomposition of an animal body occurs, the nitrogenous portions which are thrown off, that is the liquid and the solid products, get into the sewers; and if we find in water a large quantity of this nitrogenous animal matter, we may be certain that that water is not fit to drink. (Prof. Roscoe, F. R. S.)

Chloride of sodium or salt is another substance found in impure water, which also comes directly from sewage. Exception, of course, is made to water already salt or which in its course passes salt rock. The analysis of water to ascertain the presence of either of the foreign ingredients is too intricate for description here, and must be relegated to the laboratory of the chemist. There is one test, however, which anyone may employ—which is not so accurate, however—and that is by the admixture of a solution of permanganate of potash. This substance dissolved in a little distilled water or condensed steam gives a very deep red solution. If a few drops are put in a quantity of pure water, a pinkish tinge is given to the whole. If, however, it is dropped into water containing organic matter, in most cases the color will disappear. Sometimes quite a large quantity of the solution may be used and complete bleaching continued. The explanation is simple; the potash is rich in oxygen and rapidly forms a combination with the organic matter. In doing so the color is lost.

ARE DISEASES PREVENTABLE.

We have as excellent authority as Dr. Thomas Bond for stating that: "On an average, one-half the number of patients treated suffer from diseases due primarily to a want of knowledge of the laws of health and cleanliness. The ignorance of hygienic laws, which affects so disastrously the health of the rich as well as the poor, exists in regard to dress, ablution and ventilation. This statement may at first appear startling; but an enumeration of the diseases that can be constantly traced to the above causes will show upon how sound a basis the statement rests. The following are examples: varicose ulcers, from dress; skin diseases, from want of cleanliness; chest diseases and fevers, from defective ventilation."

HYGIENIC LAWS *versus* MEDICINE.

Whatever the uses of medicine—and we are willing to give them full credit—these should in no case be neglected. We apprehend,

nevertheless, that hygienic treatment, applied thoroughly, would go far to remove the necessity of medication. But the idea is utopian ; and almost everybody who professes to despise the art of the physician will eagerly resort to it in extremity. In this country we have, beside, the notion that we have not the time for slow processes of recovery, and so will not enjoy them. Certainly while we may very properly speculate about such things in the closet, we must take things pretty much as we find them in the active world. But the thoughts and ideas which are so frequently stigmatized as impracticable are generally those which revolutionize in due time. When it becomes the interest of physicians to care for the health of their patrons, this subject will receive more attention, and medication will decline into secondary importance. Heraclitus, the philosopher, propounded that caloric, or what some are fond of naming vital electricity, being the primordial principle of life should be made its perpetual renovator. Whether this sublime idea be realized or not there will be achievements like those which were in former ages denominated "miracles." (A. Wilder, M. D., F. A. S.)

DIET.

Our system requires a certain quantity of carbon and nitrogen to keep up the equilibrium of health. The healthy man requires three hundred grains of nitrogen, and forty-six hundred grains of carbon daily, to supply the waste that takes place during the twenty-four hours. Such being the case, we must select a diet which can supply as nearly as possible the amount of each of those substances. It matters little whether it is vegetable or animal, so that we get what is required. Vegetarians live for the most part on vegetables ; and there is no doubt that a well-selected vegetable diet is capable of producing in the greater number of individuals the highest physical development of which they are capable. It would, however, I imagine, be difficult for the majority of working men to get such a diet of vegetables as is necessary all the year round, so, as a general

rule, most of us have a mixed diet, that is, partly vegetable and partly animal. A good proportion is to have one of animal to four of vegetable. I fear very much that a great many men, and women too, of all classes, eat a great deal more of animal food, in the shape of meat, than they have any need to do or is good for them. I have known families among the working classes, having meat three times a day, living in fact mostly upon meat.

Let us endeavor to estimate the value of meat as an article of diet. One thousand grains of it contains one hundred grains of carbon, and three hundred of nitrogen. Therefore to obtain the forty-six hundred grains of carbon which the system requires, no less than six and one half pounds of meat must be consumed daily, whilst the requisite three hundred grains of nitrogen are contained in one and one-half pounds of meat; consequently three or four times more meat must be consumed to supply the carbon than is necessary to furnish the nitrogen. You will at once understand, then, that a diet composed only of meat is a very bad one; because if we eat enough to get the necessary amount of carbon, we have far too much nitrogen, and if we eat just enough to supply the nitrogen, we have too little carbon.

As a contrast, let us examine the value of bread as a food. One thousand grains contain three hundred grains of carbon and ten of nitrogen; hence to obtain the three hundred grains of nitrogen required by the system, thirty thousand grains or more than four pounds of bread must be consumed; but to obtain the requisite supply of nitrogen a quantity of bread must be consumed containing exactly double the quantity of carbon required.

From these facts you may see the value and economy of a mixed diet, since by calculation we find that two pounds of bread and three-quarters of a pound of meat are sufficient to compensate the daily loss of the system in a healthy man.

Average beef or mutton is calculated to contain fifteen per cent. of carbonaceous and twenty per cent. of nitrogenous material. Potatoes have twenty-four per cent. carbonaceous and two of nitrogenous,

or twelve of carbon and one of nitrogen, or very nearly the proportion of fifteen to one, which we found the system required.

Oatmeal has sixty-six per cent. of carbonaceous and sixteen of nitrogenous material; hence it has nearly as much nitrogenous matter as beef, and four times as much carbonaceous, and so is a much better article of food than beef, taken alone, as regards the requirements of the system. Skimmed milk contains about an equal quantity of carbonaceous and nitrogenous material.

Now beef may be said to be the common diet of England, as oatmeal is of Scotland, and potatoes are of Ireland. If three men were selected and fed, the first on beef, the second on oatmeal, and the third on potatoes, it would be found that he who had beef alone would not thrive as well as either of the other two.

However, bringing these considerations to our assistance in selecting a diet which will supply to the hardest working man all he wants, in a plain and inexpensive form, I would observe that, taking the Scotchman's fare with good milk and bread as breakfast and supper, and the Englishman's and Irishman's fare united to form dinner, give a diet, which both theoretically and practically, is about the best that can be devised. (John Haddom, M. D.)

MEAT.

No nation, not Cannibal or Esquimaux, has ever been such a meat-eating people as the Americans. But, with beef, our great staple meat, at 18 or 14 cents a pound on the hoof, and at from 20 to 30 cents at wholesale, and from 25 to 35 cents a pound at retail, it is quite plain that the common people—the well-to-do, even—cannot afford to indulge very freely in beef; and, as all other kinds of meat are proportionately high, and as even fish is very dear, it becomes a serious and difficult question for people in moderate circumstances to answer: What shall we eat? How shall we live? We don't know why meat should be so dear. The excuse has been that gold was so high. But with gold at par, meats are as high as they were when gold was at 180, or even higher.

Economy in cooking and serving meats must be tried. Many families waste half as much as they eat, by their slovenly way of cooking, and dishing, and using meats. Strong, nourishing soups may be more freely used—or rather stews of meat and vegetables, against which many people have an absurd prejudice, as neither nice nor genteel. Properly made they are extremely nice, besides being nutritious and economical ; and as for the gentility of the thing, that is all in the eye—all nonsense.

But then our people must learn to depend less on meat ; and to eat farinaceous and vegetable food and fruit more freely. It is a mistaken notion that men cannot work without being glutted with meat. During half the year at least our laboring men would be better able to work and to endure, on food largely composed of wheat, and rye, and oats, and rice, and vegetables, and fruit, than on a diet mainly of meat ; and all the year round it would, no doubt, be good for them and all others, to eat less meat—much less than is now common among us. (Traveler.)

MEAT FOR BRAIN-WORKERS.

Dr. H. P. Fowler, in concluding a learned and valuable essay on this subject, remarks: “ When a man is stricken by paralysis (one of the most formidable of brain diseases), what does the wise physician say ? ‘ You must eat no meat; it is altogether too exciting to the brain.’ It is the best and sometimes almost the only thing that can be done for the sick man now; but it is like locking the barn-door after the horse is stolen,’ for very rarely, if ever, does he regain his former health and vigor. There are hundreds of men this moment in New York—clergymen, active business men, lawyers, authors, students—all brain-workers, who are living high-pressure lives and eating meat two, and perhaps sometimes three times a day, and who, *on account of this marriage of excitation*, are doomed, sooner or later, to be laid upon the shelf, either from paralysis or general break down of the nervous system, or some mental or nervous disease. If they

were coal-heavers, truckmen, omnibus drivers, etc. etc., I do not think they would be in any danger, for I am not a vegetarian.

“Those who perform manual labor or those who do not work at all, either with hand or brain, provided they do not lead very inactive lives, or do not possess a very sensitive nervous organization, can eat meat during cool or cold weather with impunity. Although the cases are very few in which its consumption is a *sine qua non* to the maintenance of perfect health and strength, still, as it is a very enjoyable article of diet and we are all likely to gratify our palates, it may safely be eaten by many people. Individual cases prove but little; still, I will state that I knew of a professor in a medical college, a surgeon, who was obliged to relinquish the use of meat because it made him too nervous to perform surgical operations before the students. It has an equally marked, although dissimilar effect upon myself, producing such distressing insomnia (sleeplessness), that I have not eaten meat, of any consequence, for years. My experience and observations show that in many cases of insomnia, not dependent on other diseases, there is so strong a probability that meat is causing all the mischief, that its relinquishment should be insisted upon by the attending physician before resorting to sedative or narcotic drugs.

“So greatly conducive to irritability of the nervous system is meat, especially beef, that among its minor evils may be reckoned the weeping over lessons, the fractiousness, the petulance, the hysterical laughing and crying, the low spirits, excessive home-sickness, etc., etc., which appear to be the usual accompaniments of boarding school life. This is lamentable. Whenever I see a school of young ladies afflicted with ‘nervousness,’ it reminds me of a beautiful garden of roses infested with mosquitoes. It always requires considerable moral courage on the part of the medical attendant to prohibit the free use of meat, except in cases of very grave nervous disease, like paralysis etc.; for it seems to be the universal opinion, that the butcher’s cart and meat market are the only barriers between

mankind and death. This is not so—provided food equally nutritious is substituted for it.”

FISH.

The idea of some physiological speculators that fish is specially a brain food is not sustained by the intellectual character of the people who live mostly on a fish diet. It is almost an adage both in and out of the medical profession that this has a remarkable effect upon the brain and that it is the greatest of brain foods. A short sojourn among fisherman would dispel any such delusion. There is not the slightest difference in intellectuality between one who eats much fish and one who eats little or none, that can be traced to the diet alone. Besides eating fish at every meal would soon cause dyspepsia. The best food for brain workers is fruits, wheat, oatmeal and as a stimulant mutton and beefsteak.

EGGS.

It is hardly necessary to say that eggs are an excellent form of nourishment, if rightly used. They contain, like milk, just those substances needful for the body, only more concentrated. They are rich in both fat and albumen.

If an egg weighs two ounces it will contain about 200 grains of *solid* substance, as each ounce represents about 100 grains of solid matter. In choosing eggs, do not fail to get fresh ones, which are transparent on looking through them toward the light. Bad eggs will float in pure water. Good eggs sink in water in which ten parts by weight of salt has been dissolved.

Aside from the water, of which eggs contain less than meat, the former is almost pure nutriment. An egg is more nutritious than meat. There is no waste in the form of bone, rind and tough pieces. A wealthy friend once told me that for his small family it took about three pounds of meat per day for each person; but this was because there was so much waste in flesh. Flesh is the most expensive of foods. Eggs are the cheapest animal food there is. There is nothing artistic about meat, but good eggs are clean, and look beautiful when

properly prepared. After eating them the plate is not covered with waste pieces, fit only for dogs and cats. I think eggs, considering the nutriment they contain compared with beef, at least four times cheaper. They are more easily cooked. To roast or broil a pound of beef requires considerable fuel and takes much time. To cook a pound of eggs little of either. The English vegetarians eat no flesh. They are generally long-lived, much longer than other people average. They use eggs moderately.

The way to cook an egg, according to our notion, is to put it into water of a temperature of 180 degrees and let it cook fifteen minutes. The inside or yolk will then be hard, and the white of the egg will not be hard, but flocculent like curd, and easy of digestion. A little skill will teach any one how to cook eggs thus, and they will be delicious. The only dressing admissible on an egg is a little good butter. Pepper and salt are only demanded by a morbid taste. Hard-boiled eggs, I think, are worse than nothing. A fresh egg dropped in water about 180 degrees Fahr., and allowed to remain some fifteen minutes, so as to cook through, and then laid on a nice piece of brown bread, which has been toasted and dipped in hot water, is good enough for a king.

Custards made from eggs are both nutritious and wholesome. For the feeble they are better than beefsteak, and may be used freely. (Herald of Health.)

As the custom prevails among the majority of English speaking people of using refined wheat flour, some nitrogenized body must be introduced into the system to meet its demands. Hence the use of meat, eggs, cheese, etc., is a necessity unless the vegetarian plan is adopted and the whole grains or unbolted flour is utilized.

WHEAT.

"Bread is the staff of life." Like many trite sayings it is likely to cover a fallacy. We know little of the history of this expression, but are inclined to think it must have had its origin in times anterior to the manufacture and sale of triple extra refined flour.

If in the context *wheat* is substituted for bread, we indisputably accept the proposition and its application. No staff can furnish proper support to life that relieves but one organ or part of the body, to the exclusion of others. The very best (?) flour supplies material fat and heat only, consisting almost entirely of starch. The gluten or flesh-forming element is on the surface of the grain, and is almost entirely lost in separating the bran. Used alone it is a poor support, but not quite as insufficient as some other single element, for instance albumen, which exists in the white of an egg, and which it has been experimentally discovered will produce starvation; the animal's disgust for such food being so great, that even if it is swallowed it is not digested. Besides "the excess of *farinaceous* matters, especially when combined with a deficiency of the albuminous, (as it too frequently is among those who are obliged by necessity to live chiefly upon a 'poor' vegetable diet) tends to the production of the *rheumatic* diathesis," or condition of the system tending and liable to rheumatism, "which seems to consist in the mal-assimilation and wrong metamorphosis of the components of the tissues, especially favored by the presence of lactic acid or of some other product of the metamorphosis of the saccharine compounds."

But what have we in the flour to supply nourishment to and repair waste of the brain and nerve tissues? Simply nothing; the phosphates are entirely wanting. But the whole grain, and the rule will apply to most of other grains, taken in its entirety gives us about all the elements required. Nature has ministered to man's wants in her usual perfect manner, combining in this small compass, the heat-producing, flesh-making, and brain and bone forming elements. This is quite sufficient to support life.

We must however deal with the facts as we find them. The great majority of English speaking people will continue to use refined flour in making bread. Hence flesh, fowl, fish, eggs, cheese, milk and the like are necessary. Most nitrogenized food should be taken at the morning or noon meal, certainly not subsequent to three P. M.

The quantity will depend much upon the occupation and habits of the individual. The training athlete will eat and digest three pounds of beef *per diem*; the milliner has a sufficiency in one tenth as much.

The question of how to live cheaply has lately been agitated to considerable extent. Looking at the subject from the physiological standpoint of meeting all the requirements, we know of no cheaper food than whole grain wheat. This can be purchased at most flour mills by weight or by the bushel. An half cupful soaked over night in cold water and boiled one hour is hearty and palatable. A great improvement both in cooking and in the variety of uses to which it is applicable, is made by grinding in a hand mill, coarse or fine, when wanted. These handmills for family purposes can be had in most cities.

It will be observed in the foregoing paragraphs that I have spoken of the need of meats or flesh to the bread eater. The strong language in which I have advocated the use of grain may not be sufficient to show my convictions upon the subject of flesh eating, and which I wish the reader to believe and adopt. My sentiments are so cleverly stated in an essay by A. H. Sexton, F. C. S., that I cannot refrain from using his exact language.

1. Man is constituted for a vegetable diet. In structure he resembles herbivora (grain-eating animals) much more closely than the carnivora (flesh-eating animals.) His teeth are exactly similar to those of the apes, suggestive of the diet of fruit and grain. The biblical account of man's creation indicates the true source of his diet. The evidence of tradition confirms this. The poets of every age, from Ovid to Shelley, have testified in its favor.

2. All the material necessary for the sustenance of the human body is supplied by the vegetable in one available shape. All nutriment is derivable directly or indirectly from the plant. Liebig affirms this strongly. The chemical analysis of foods is conclusive on this point. Adam Smith, in his "Wealth of Nations," while doubting if butchers' meat were any where a necessity of life, affirms the truth, so well

known from experience, that Nature, without flesh of animals, affords the most plentiful, the most wholesome, the most nourishing and the most invigorating diet. "Good wheaten bread," says Dr. Carpenter, "contains more meat than any other substance in ordinary use, and contains the proportion of azotized and non-azotized matter which is adapted to supply the wants of combustible material under the ordinary conditions of civilized life in temperate climates. Health and strength can be more perfectly maintained upon this substance than on any other taken alone." Figs are as nutritious as bread. Peas and beans contain one-third more nitrogen than meats.

8. A vegetable diet is capable of maintaining vigor, bodily and mental, and is favorable to longevity. Observe the superior strength of herbivorous animals. Who can fail to recognize in the history of nations abundant evidence in proof of this position? The Scotch and their oatmeal have become proverbial; while every one has heard Dr. Johnson's definition of oats as food for men in Scotland and horses in England—"and such men and such horses!" The native Irish are quite as good instances. The ancient Greeks, the victors of Marathon—the Roman army at the time of its greatest powers—the famous Greek athletes—all fed on vegetable diet. So the Japanese and many of the natives of Hindostan of the present day. An Indian messenger has carried dispatches from Calcutta to Bombay in twenty-five days, traveling at the rate of sixty-two miles a day. Inhabitants of the Himalaya fed only on rice are superior in strength to our own seamen. Sir William Fairbairn described the boatmen and water-carriers of Constantinople as physically "the first men in Europe,"—though all water-drinkers—their diet being chiefly bread, cucumbers, dates, etc. The porters of Canton living chiefly on rice and fruit carry enormous weights. A large portion of the inhabitants of the world never touch meat. The Peruvian army led by Gen. Valdez in 1823, marched from Lima to Arequipa, a distance of 750 miles, in eleven days and then routed a large army, on a diet of parched corn. Dr. Guy, in reporting on prison dietaries, gave his opinion unhesitatingly "in favor of the sufficiency of a dietary, from

which the meat element is wholly excluded," as likely at once to preserve health and with it the capacity for labor. It is well known that the Harvard boat-crew trained on vegetable diet. Dr. Carpenter (while advocating a mixed diet) concedes that a well selected vegetable diet is "capable of producing the highest physical development." Lord Heathfield, who defended Gibraltar, neither ate animal food nor drank wine.

4. A vegetable diet conduces to a higher moral state; while carnivorous animals are ferocious, the herbivora are docile. Races which eat flesh largely are most savage, *i. e.*, the Tartars and North American Indians. It was the observation of Bishop Heber that cattle fed on fish became unmanageable. Porphyry of Tyre, writing about the middle of the third century, in choice and forcible language denounced indulgence in appetite which excites the passions and lead men to "ruin their health and to renounce the joy of an upright conscience."

5. The vegetable diet is most economical and would largely increase the producing powers of the country. The importance of this becomes evident when we look at the food which we relatively produce and import. An acre of land will produce—mutton, 328 lbs. per year; beef, 1,831 lbs.; wheat, 15,261 lbs.; potatoes, 22,400 lbs. The land could support an hundred times as many people on a vegetable as it can on a purely flesh diet. As population increases this fact will command attention. The culture of fruit is much more economical than cattle-breeding. From 8,000 lbs. to 15,000 lbs. of strawberries can be produced per acre.

6. A vegetable diet conduces to health; a meat diet predisposes to disease. The entozoa and internal parasites of men are derived from the lower animals. Almost all meat is diseased, especially if tatted. Lean meat would not sell. Stall-feeding naturally gives rise to lung and other diseases. Ought we to wonder at the increase of consumption in the human subject? Gout, and similar diseases, are naturally produced by high and intemperate living. Excretion

and decay are constantly going on in animals. A percentage of all flesh meat is decayed and ready to be excreted.

7. Humanity to the animal creation is incompatible with "sport" or with the needless slaughter of animals for food. Dr. Hawkesworth classes "among the dreadful and disgusting images which custom has rendered familiar," are those which arise from eating animal food. "He who has ever turned with abhorrence from the skeleton of a beast which has been picked by birds or vermin, must confess that habit alone could have enabled him to endure the sight of the mangled bones of flesh of a dead carcass which every day cover his table; and he who reflects on the number of lives that have been sacrificed to sustain his own, should enquire by what the account has been balanced and whether his own life has become proportionably of greater value by the exercise of virtue and piety, by the superior happiness which he has communicated to reasonable beings, and by the glory which his intellect has ascribed to God." No man has a right to set another to do for him that which he would not do for himself. Who can endure to see the agonies of a dying lamb to satisfy his own appetite?

It is objected that a flesh diet is more savory—that it has acquired its strength of habit and that undeveloped appetites need stimulating food. Flesh food is stimulating, and the organism makes a violent attempt to rid itself of stimulating substances. All stimulants are abnormal and injurious and produce depression. Hence the craving for stimulants; and hence the habit of flesh-eating naturally leads to drunkenness. All stimulants tend to shorten life. Animals may be made to minister to our use without slaughter!

With but little effort, particularly if attempted in the summer time, any one may easily change from a mixed diet, or one principally of flesh, to an exclusively vegetable diet. With most persons the change should be gradual. During the summer we should eat the lighter foods such as fruits, vegetables, wheat, rice, etc.; during the winter, the heat producing such as oats, beans, nuts, corn-meal, dried peas, etc.

We, as a nation, make our bread from this impalpable dust of wheat, thrice bolted, bolted to death. The life having been crushed out, the best part of the food must be sifted out or we will not touch it. We carefully reject the portions of the grain from which the enamel of our teeth is made, and expect nature to make bricks without straw. But she does not ; and our wretched teeth, friable and chalky, must be dug out before we reach middle age and replaced with celluloid. No where else do men live so exclusively upon flour from which silicious particles have been expelled ; and, as a consequence, foreigners wonder at our army of dentists—one or two in every hamlet—relieving the aches that arise from our “ double extra superfine,” and filling our offended mouths with gold and pottery ware. The horses eat our enamel, and from want of the mechanical aid offered by innutritious food, our own digestion suffers.

FRUIT.

We hardly know how to account for the popular impression that still prevails in rural districts, that the free use of fruits is unfriendly to health. It has much to do with the scarcity of fruit gardens and orchards in the country. As a matter of fact, cities and villages are much better supplied with fruit the year round, than the surrounding country. There are hundreds of farms, even in the oldest parts of the land, where there is no orchard and the only fruit is gathered from a few seedling apple trees grown in the fence-corners. The wants of the cities are supplied not so much from the proper farming districts, as from a few men in their suburbs, who make a business of growing fruit for market. The farmers who raise a good variety of small fruits for the supply of their own families, are still the exception. The villager, with his quarter or half-acre lot, will have his patch of strawberries, his row of currants and raspberries, his grape-vines and pear-trees, and talk intelligently of the varieties of these fruits. His table is well supplied with these luxuries for at least half of the year. But there is a lamentable dearth of good

fruits upon the farm from the want of conviction that it pays. It does pay in personal comfort and health if in nothing else.

The medical faculty will bear testimony to the good influence of ripe fruit upon the animal economy. It regulates the system better than anything else, and forestalls many of the diseases to which we are liable in the summer and fall. A quaint old gentleman of our acquaintance often remarks that apples are the only pills he takes. He takes these every day in the year, when they can be found in the market, and fills up the interval between the old and new crop with other fruits. He has hardly seen a sick day in forty years, and pays no doctor's bill. We want more good fruit, especially upon our farms, and the habit of eating fruit at our meals. This is just one of the matters in which farmers' wives can exert an influence. A few dollars invested now will bring abundant returns in from one to five years. It is more intimately connected with good morals than our philosophers think. With good digestion it is quite easy to fulfil the law of love. (American Agriculturist.)

Many who suffer from the use of the strong acid fruits, such as sour apples, currants, cranberries and the like, may often eat the sweet with impunity, such as dates, figs, berries and grapes and sometimes the others, if they are cooked.

HOW TO EAT.

Eat at regular intervals. Two meals are not enough if laboriously employed. Three has disadvantages to those sedentarily inclined : these over-eat and do excessive mental work before digestion is fairly begun. Some have introduced a maxim, always get up from the table hungry, or its equivalent, always leave the last slice of bread desired. The results of careful inquiry and study leave it without foundation. If you will eat slowly, and masticate well and drink little or not at all at your meals, you can hardly eat too much. Hunger is a demand of the blood for nourishment, communicated through the nervous system. Hastily filling the stomach to repletion terminates too quickly for any appreciable digestion or absorption. The stom-

ach is overloaded, therefore, before the response can be given that a sufficiency is received. By the plan above indicated, this waste of food, this loss of comfort and the ill-nature and dyspepsia which sooner or later follow, are all avoided. Enough is *better* than a feast, and if you have not learned to subdue your passions, some practice and the exercise of the judgment will at first be required.

FOOD FOR INVALIDS.

No exact rule can be laid down respecting the proper regimen for the sick. Much depends upon the nature of the disease, and much also upon the former habits. If the disease is characterized by extensive, or a high grade of, inflammation, fluid foods do better. There are times in which only water is indicated, for instance, when we find loss of appetite and a heavily coated tongue. Milk is one of our best articles, and it may be varied with gruels, Graham flour, or oatmeal, and occasionally with soft custard. When the appetite is wanting, little or no food is needed. If administered, it will either aggravate the disease or pass from the body undigested. Besides, the food is not relished as the taste is impaired by the coating upon the tongue, unless highly spiced, and this of itself may be hurtful. Persons usually need water, and, if frequently given, they will not only never complain of thirst, but will also more speedily regain the appetite for food.

Those suffering from chronic diseases require quite different advice. In many instances although much food is swallowed, the body is slowly starved from the lack of digestion and assimilation; indeed good food is destroyed in great quantities by fermentation. One point is certain: the food must be plain, nutritious, unstimulating, and in quantities limited to the amount of digestion. This can easily be discovered by the presence of a keen appetite before the regular meal time, the returning relish during the meal and the absence of discomfort following.

BEEF TEA.

Beef tea is a stimulant in the same sense that alcohol, tea,

coffee and chocolate are stimulants; but they possess scarcely a particle of real nutritive value.

It is a common practice with many persons, even with physicians, to recommend beef tea for feeble patients who are supposed to need concentrated nutriment. Because a pound of extract of beef is made from thirty pounds of beef, it is thought to contain in a condensed form the nutrient elements of the whole thirty pounds of meat. Instead of this, it contains scarcely a particle of the nutrient elements, but nearly all of the stimulant element of the flesh.

Liebig, the inventor of beef extract, distinctly states in his description of it that it is *not* a food, but a *stimulant*, and as such, he classed it with tea and coffee.

In view of these facts, it is indeed surprising that an article of so little food value should still be recommended by many physicians as the best of all aliments for those who need nourishing food. (Health Reformer.)

LEAD-POISONING BY COOKING UTENSILS.

At a meeting of the Michigan Board of Health this subject received attention. The *Health Reformer* published the following abstract:

Dr. Kedzie presented some results of his investigation on the subject of lead-poisoning by means of tinned ware and other vessels containing lead. He said it is well known that there are substances actively poisonous when taken in large doses, that when taken in small but repeated doses often produce effects so obscure that they may be mistaken for the symptoms of some chronic disease.

Lead, arsenic, antimony and copper are examples. The chronic poisoning which may be caused by minute doses of any of these metals, and the possibility of mistaking such metallic poisoning for some disease of a different nature, should warn us against their use, or make us careful and guarded while using them. Vessels in daily use for preparation or serving of food are especially liable to affect the physical condition if they contain any material which will insidiously sap the foundations of health and strength. Culinary vessels

which are cheap, durable and convenient and without injurious influences on the health bear an important relation to the comfort and well-being of the people. Of all cheap metals for such use, tin fulfils these conditions better than any other. It is comparatively cheap, resists oxidation by exposure to air and water, has a white color, is not readily dissolved, except by strong mineral acids, and the only salt of tin which is actively poisonous is the chloride, which will never be formed in the domestic use of tin vessels. The readiness with which iron surfaces may be coated over with it contributes to its valuable uses.

Unfortunately, while tin is comparatively cheap and safe, lead is cheaper and very dangerous. Yet the two metals readily unite, forming an alloy which may be used in place of tin, but which will generally oxidize and be dissolved by acids more readily than either metal of which it is composed. The danger of poisoning by the use of such vessels is very great. The attention of the State Board of Health has been called to this subject by a letter from Dr. Dorsch, who writes that he has seen cases of *paralysis agitans* which had been taken for chorea, although other symptoms of lead-poisoning were present, and investigation showed in all cases that cooking and eating with tin spoons or in earthen and iron vessels with a coat of lead were the cause. The same is true with milk vessels. The acid dissolves the lead salts and children are poisoned, dying by tubercles of the brain, meningitis, fits and paralytic affections.

Grown persons do not escape, although resisting longer. A similar danger arises from tea and coffee pots of earthen ware or composition metal, from tin sieves and tunnels, and almost all cooking utensils used by the poor. They are about as dangerous as the adulteration of food and spices, so common all over the country.

The danger of lead poisoning is a matter of great importance, because so large a proportion of our population employ tinned vessels for culinary and table use. The alloy of tin and lead oxidizes much more readily than pure tin and the oxide of lead is very soluble in acetic acid or vinegar, or lactic acid, forming sugar of lead. It also

forms salts with malic and citric acids, which are contained in apples, cherries, gooseberries, currants, or any other acid fruits. When cooked in vessels containing lead, or even placed in them for some time, they are liable to take it up and become very injurious thereby, because all salts of lead are poisonous. In this way a large portion of our daily food may be a vehicle of poison if prepared or contained in vessels containing a sensible amount; and this danger is greater because the compounds of lead are cumulative in their influences. A person may not be poisoned by one or two small doses, but minute doses taken for a long time will break down the health and even destroy life.

The doctor said that of a large number of specimens of tin-plate, tinned iron, and other culinary articles examined by him, he found in almost every instance an alloy with lead, and it was often present in large quantities. It is an astonishing fact that a large proportion of the tinned wares in the market are unfit for use because of the large quantity of lead with which the tin is alloyed.

TEST FOR LEAD.

Place a drop of strong nitric acid on the tinned surface and rub it over a space as large as a dime. Warm it very gently till dry, and then drop two drops of a solution of iodide of potassium on this spot. The bright yellow iodide of lead will form on the spot if the tin contains lead. This test can be rapidly applied, and the results are decisive. The doctor was informed that a peculiar kind of tin plate, the tinning composed mostly if not entirely of lead, was coming into general use for roofing eave-troughs and water-pipes. The lead thus exposed would be in conditions favorable for oxidation, and a quantity of oxide and carbonate of lead would be washed away in the rain-water and deposited in the cistern with every storm. Susceptible persons may be poisoned by washing in such lead-charged water, and all persons drinking it even after it has been filtered, will be in danger of chronic lead poisoning. Earthen vessels are usually glazed to overcome their porosity. In many cases this glazing con-

sists of fusible silicates of the alkalies and alkaline earths. These have no injurious influence on the health. Oxide of lead, when added to the alkaline silicates, borates, etc., makes a very fusible and closely adhering glazing, and is sometimes used ; but its use is very dangerous, especially if the vessel contains acid substances. The glazing decomposes, lead salts from it are either dissolved or are mechanically suspended in the contents of the jar, and there is great danger of chronic lead poisoning. This danger is, unfortunately, very common.

Within a short time an enamel has been successfully applied to vessels made of iron plate, the enamel or glazing taking the place of tin-coating or tin-plate. As these vessels are coming into general use it is a matter of public interest to know what would be their influence on public health. A culinary vessel, to be safe, must be impermeable by water and grease. Metals, especially where vessels are made without seams or joints, such as pressed tin-ware, glass, and many kinds of porcelain, are admirable in this respect. If the new enameled ware shall prove satisfactory, it will be an important acquisition. At the present time the most hopeful outlook for good, safe and cheap culinary vessels lies in the direction of some fixed unabsorbent enamel for pressed iron ware which will maintain an unbroken surface, under all conditions, for domestic use.

Another indispensable condition for a safe culinary vessel is that it shall not contain any poisonous material by which the food cooked or contained in it shall be injuriously affected.

The specimens of granite ware which he had examined failed to reveal any poisonous or injurious substance. He regarded it as a safe material to use, but feared its power to resist the tendency to crack after it had been frequently heated. The marbled iron ware presented very different results. The enamel was found to contain a large amount of lead, and even traces of arsenic were obtained from the enamel by the use of Marsh's apparatus.

In a quart basin of this marbled iron ware he placed eight ounces of water containing five per cent. of nitric acid, heated it

boiling hot, and kept the whole in a warm place twenty-four hours, then evaporated the dilute acid to dryness, dissolved the residue in water, filtered, and from the filtrate precipitated the lead, obtaining in this way what was equivalent to twenty-three grains of lead. In a similar basin of marbleized iron ware eight ounces of vinegar (free from lead) were placed and kept in a warm place twenty-four hours, and then treated in the same manner as the dilute acid. This resulted in obtaining what was equivalent to seven grains of lead. On powdering some of the enamel and heating it with concentrated acids, very distinct traces of arsenic were obtained. This was probably not present by design, but accidentally from being contained in some of the substances used in making the enamel. A culinary vessel which contains so much lead and in such a state of feeble combination that eight ounces of ordinary cider-vinegar can, in twenty-four hours, dissolve from a quart basin what is equivalent to seven grains of metallic lead, must be a very unsafe vessel for general use.

ARSENICAL WALLS.

The covering of our walls is a matter closely connected with the sanitary condition of our dwellings, which has hitherto been unaccountably neglected both by the occupants and by health officers. With paper, paint and distemper wash, containing the deadly and volatile poison of arsenic, which is continually given off in the form of an impalpable dust; and also of arseniuretted hydrogen which is gaseous at the common temperature of the air, can we wonder at deterioration of health and races? The fact that nearly all the green coloring now in use is arsenical has been indisputably proved by analysts. Specimens can be produced of papers containing from six to fourteen grains of arsenic to the square foot, and papers containing only a figure or line in green are arsenical and dangerous. Yet such papers are seen everywhere, in the houses of the rich and poor, in city and country. Medical men have these papers on their walls and suffer unawares. Nor is the arsenic confined to the green coloring, but is used in papers of all

colors, even in white, for its gloss and finish. It often happens that dangerous arsenical papers are concealed underneath harmless ones, owing to the pernicious custom of putting one paper over another. Wherein lies the remedy? The Prussian Government, in 1860, "forbid the use of arsenic in any colors, whether distemper or oil, for indoor work," yet in this country arsenical paint is freely used on the walls of our rooms and on Venetian blinds (the green paint containing 75 per cent. arsenic). Of what use, comparatively speaking, are restrictions on the sale of arsenic by druggists, when painters and paper-makers purchase and use it in unlimited quantities, even by tons, weekly, thus poisoning the people by wholesale? Protective legislation is urgently demanded. All papers now in use that do not stand the test should be removed, and the walls colored with whiting and size, tinted with safe colors, care being exercised to learn of what the colors are composed in the substituted paint or wash. The general results of this blood-poisoning are fevers, eruptive diseases, debility and choleraic diarrhoea, not to mention its preparation of the system for the reception of contagion and epidemic, and by prostration of strength inducing fatal results in attacks not of themselves dangerous.

WATER.

Water becomes dangerously impure chiefly under these conditions:

1. When some localities in a town or village are at low levels as compared with others and are so situated as to receive the drainage of these other localities.
2. When the drainage is radically defective, the drains and common sewers being so constructed as to leak into the sub-soil or to become choked and to overflow from time to time.
3. When the drainage, though well constructed, takes place into a river or stream, and the water supply comes from the same river or stream and within the poisonous influence of the sewage.
4. When there is no system of drainage at all, properly speaking, but a system of cesspools; when impurities are allowed to accumu-

late superficially on the soil, and the soakage from the cesspools diffuses itself widely through the subsoil so as to contaminate the wells from which the water supply is derived.

The purer the water, that is, the freer it is from earthy salts which impart hardness to it, the more easily does it become impregnated with metal. Especial care must be used, and lead cisterns must be avoided. You must always remember likewise to allow the water that has been undisturbed in the lead pipes all night, to run awhile before drinking of it in the morning, or before filling up the kettle; for boiling does not get rid of the lead or render it less hurtful, as it does, no doubt, some organic impurities.

Most of you in cities have only to go to the tap for water when you want it, but in some cases in the country it has to be kept for a time. If so, never leave it about in open vessels, for dust will fall into it, and it will absorb various substances from the air. To illustrate this, I need only mention the common practice of putting buckets of water into a newly painted room to take the smell of the paint away. It certainly does that to a great extent, and if you examine the water you find that it soon smells strongly of the paint, showing how absorbent water is. Think, too, what is meant by the dust of an inhabited room. It is composed of minute particles—I was going to say of everything—but certainly of everything that can be rubbed off our clothing, and from the walls of the room, and the furniture, and also from our own bodies.

Keep it covered, therefore, not in metal vessels of any kind, nor in wood, but in glazed earthenware or stoneware jars with lids to them. And empty these now and then, and thoroughly cleanse them. Use iron utensils for cooking, and never have them repaired with lead solder, as the lead will poison the water to some extent. Supposing that the supply of towns' water has been stopped for a time, run a good deal of it off before using it, and see that it is bright and clear. This brightness is by no means a proof of its purity, but all good water is bright and clear, so that if it should be muddy or turbid you know it is not fit to drink.

Water should be free from all smell, and should have no definite taste ; but you should always, however bright it may look, use a filter, which separates, at any rate, all mechanical impurities.

CISTERNS.

A model cistern is made of brick and cement. If the walls are four inches in thickness it should be cone-shaped ; the pressure of the surrounding dirt will then add to its strength. If the walls are thicker the diameter may be the same from bottom to top, or the upper portion contracted, making it bottle-shape. The excavation should be at least two feet greater than the proposed side of the cistern. The brick should be well covered with cement on the outside as the work progresses and sufficiently long in point of time before filling is begun to receive careful inspection. The top should be carried at least one foot above the surface of the ground so as to prevent admixture with surface-water. When the brick work is finished the inside should receive two or three layers of cement. When set, the bottom should be cleaned and well covered with cement. Over this should be laid a layer of brick, and over the brick a thick cement. Such a cistern is perfectly water-tight and its contents cannot be contaminated by neighboring pools or water-courses, noxious deposits upon the ground, or contiguous privies. Care should be taken in the selection of cement. Portland is the best. The bricks may be odds and ends or even second-handed. Wood of any kind should not be used as it quickly decomposes and charges the water with poisonous substances, which produce fevers, chills and diseases of the bowels and blood. More so-called "malaria," summer complaints, dysentery and serious fevers of a typhoid character, are caused by using water charged with decaying and animal matter, than are produced from any other source.

PURE AIR.

Though we eat three times a day we breathe 25,000 times in twenty-four hours ; with every breath we draw, we take into our lungs about

one pint of air; the truth then is that eating and drinking may be considered as secondary or supplementary functions in the complicated process performed by that living engine called the body, while the more important task falls to the share of the lungs. The stomach may suspend its labors entirely for twenty-four hours without serious detriment to the system, while the work of respiration cannot be interrupted for six minutes without fatal consequences.—(Dr. F. M. Oswald.)

The air is poisoned by carbonic acid gas; traces of it are always found. It is the life of the plant and of vegetable growth, but in the proportion of one part in a hundred it is dangerous to animal life. In crowded assemblies this proportion is often exceeded. Interest in the subject, the eloquence and magnetism of the speaker, do not in some instances counterbalance the poison, and the hearer falls asleep; besides, in this condition, respiration is less active and hence less of the contaminated atmosphere is inhaled. This poison is caused by the escape of the gas from the lungs. All combustion produces it. It is rapidly generated by fires, but is carried away by the ascending heat and draft. When the draft is deficient, it passes into the room. In its pure state it is heavier than air and hence falls to the floor or ground. It does not remain there, however, for it is a law of nature that gases shall commingle. They seem to have an affinity for each other. This poison, therefore, soon pervades the whole room and enclosure. Analogous to this are the gases from improper combustion noticed upon going into a room where the flame of the lamp has been so diminished as to create but little draft in the chimney or where the last of the contents of the lamp is being consumed; from coal-gas seen in its effects upon silver, leather binding of books, etc., and from defective chimneys.

The atmosphere is despoiled of its purity by the noxious vapors arising from animal and vegetable decay. With these may be classed the effluvia from slaughter houses, from dead animals, from decaying leaves, herbs and vegetables in cellars, from rotting wood about door-yards and in village walks, the deposit of animals in barn-

yards and in the streets of cities, from privies and the noxious exhalations from drains, sinks, cesspools, sties, coops and stables.

Pettenkofer and Coit found that exposure to air containing ten parts per thousand of carbonic acid gas could be borne with impunity for a long time, if it were pure in other respects. But in occupied rooms many people suffer from headache and giddiness when the carbonic acid gas is any more than one and one-half per cent. per thousand, probably in great part from the presence of organic impurities, and also from the diminished proportion of oxygen.

Many of you may know the story of the 146 prisoners—English people—who were confined in the “Black-hole of Calcutta,” and of whom 123 died in one night, while many of those who survived afterward died of “putrid fever.” No doubt many were suffocated, but the fever which attacked the survivors was caused unquestionably by the exhalations from so many crowded together in this living tomb. The history of our own country even up to quite recent times, shows that the same cause has often been at work.

John Howard, the philanthropist, says that in his day “the malignity of the air in gaols” was such that in his first journey his clothes were so offensive that he could not bear the windows of a post-chaise up, and was often obliged to travel on horseback, and the leaves of his notebook were so offensive that he could not use it until it had been open an hour or two before the fire.

Persons working in factories, such as flouring mills, planing mills, foundries and the like, where the atmosphere is loaded with dust, should breathe entirely through the nose, and the nostrils should each be filled with a piece of moistened sponge or covered with the Respirator. Those who have not tried this will be surprised at the amount of dust collecting in a single hour.

Pure air will avert scrofula and consumption, cure cholera and typhus, and mitigate the violence of any disease. It is the best, the most thorough disinfectant in existence. The contagion of small-pox, scarlatina, diphtheria, measles, dysentery, cholera, typhus, all

are neutralized and made innocuous by immersion in pure air. One reason of prolonged sickness is the continued breathing, by the patient, of the exhalation of his own lungs and body.

Dr. Paul Niemeyer says: "It has long been held that closed windows are the principal cause of consumption. I would make the proposition more general by substituting *defective ventilation* for "closed windows." It is very pleasant to be sheltered by four walls against wind, rain and cold; but, now that we employ window-glass, coal for heating and iron stoves, and rent is becoming higher, while rooms, especially sleeping-rooms, are growing smaller, we have all the greater reason to keep open ventilating apertures, since our lungs cannot live with less than six hundred feet of fresh, pure air per hour. The man who has but once made trial for one week of sleeping with the window open will never give up the practice.

"More rational opinions are gradually making their way, and in one particular at least a beginning is being made of a revolution; namely, the system of treatment followed in 'climatic' sanitariums, and establishments for the cure of disease, by air, difference of elevation, etc. The proprietors of such places, it is true, speak of the 'specific' virtues of their climate; but, inasmuch as chemistry shows that atmospheric air *all over the earth has the same constitution*, the specific virtue must reside in the special purity of the air—a thing wanting in cities, but found in all villages, provided they do not possess large factories."

But air is not pure and beneficial by virtue solely of its freedom from contaminating elements. It needs to be shone through daily, actinized, vivified by the sun. Scrofula, tubercle and a swarm of other maladies are engendered by living in the shade. We have all witnessed potato-vines growing in a cellar: how watery, white and tender they were. Human faces are bleached and human bodies are made fragile in the same way. Sunshine is as beneficial for human blood as for the top of a tree or plant. We make an allowance for the torrid days of summer; but even then the light can be enjoyed. A sleeping apartment which is not daily lighted through, as well as

aired, is a chamber of pestilence. With rooms darkened by shades and curtains, carpets contaminating the air and wall-paper often little less mischievous, all care being taken to save the furniture, overlooking the inhabitants, we can expect only sickly persons, half sick when reputed well and tediously valetudinarian always.

VENTILATION.

For cold weather the plan introduced by Dr. H. A. Dodge is valuable:—

Nail or screw a neat strip of wood, from one to two inches high, upon the window sill, just inside of the sash, and extending entirely across from one side of the window frame to the other. Upon the top of this strip fasten a piece of ordinary 'weather strip,' so that there will be formed an air-tight joint between the weather strips and the lower sash of the window, whether the latter is shut down tight or raised an inch or two, the lower crosspiece of the sash sliding on the rubber of the 'weather strip' as the sash rises. With this simple fixture in place, the lower sash may be raised enough to admit a stream of air between the lower and upper sashes, where they lap over each other at the middle of the window, without admitting the least air at the window sill. The air admitted between the sashes is thrown directly up toward the ceiling, and then mixes with the heated air at the upper part of the room. The room is thereby ventilated in a thorough and agreeable manner without draughts of cold air upon the persons in the room. The fixture should be applied to several windows in the room. The amount of ventilation may be regulated by the distance that the lower sash is raised. This arrangement is cheap, simple and effective.

VENTILATION OF BED ROOMS.

The sleeper, like a bed-ridden person, is entirely dependent upon the atmosphere supplied to him for the means of carrying on the chemical purification and nutrition of his body. He must breathe the air that surrounds him, and he does this for several hours,

although in a majority of cases the atmosphere has become so deteriorated by the expiration of carbon and the emanations from the body generally, that if the senses were on the alert some change would be sought as a mere matter of preference. When a person places himself in a condition to take in *any and all* air, without being able to exercise any control over its delivery, he ought to make sure that the supply will be adequate, not merely for the maintenance of life but the possession of health. If a man were to deliberately shut himself for six or eight hours in a stuffy room, with doors and windows closed, and were then to complain of headache and debility, he would be justly told that, his own want of intelligent foresight was the cause of his suffering. Nevertheless, this is what the great mass of people do every night of their lives with no thought of their imprudence. There are few bedrooms in which it is properly safe to pass the night without something more than ordinary precautions to secure an inflow of fresh air. The old-fashioned fire-place with its open chimney was the correct thing, but we are wise in our day and generation, and have got beyond all that. If the doors have transoms, we can look to these and the windows for ventilation, but I fear that in general we all have to rely upon the windows alone. Summer and winter, with or without fires, it is best to have a free ingress for pure air. Foul air will find exit, if pure air is admitted in sufficient quantity, but it is not certain that pure air will be drawn in if the impure is drawn away. The aim must be, to accomplish the object, without causing a great fall of temperature or a draught. The upper sash may be drawn down an inch or two with advantage, and a fold of muslin will keep off the draught. Another plan is to raise the lower sash two or three inches, insert a board under it, leaving the space between the sashes at the centre of the window open for ventilation or, if a permanent fixture is desired, use that above described. Either has the advantage of not throwing the stream of air directly into the room. It is, however, essential that the air outside should be pure. Little is likely to be gained by letting in fog, or even the city mist, smoke and dust.

SUNLIGHT.

Light is one of the most active agencies in enlivening and beautifying home. As great as is the value of sunlight as a life-giving agent to the physical constitution, it is no less so to our own moral and spiritual nature. We are more active under its influence; and think better and act more vigorously. Let us take the airiest, choicest, sunniest room in the house for our living room—the workshop where the brain and body are built up and renewed—and there have a bay-window, no matter how plain in structure, through which the sunlight and pure air can freely enter. Dark rooms bring depression of the spirits, imparting a sense of confinement and isolation and powerlessness which is chilling to energy and vigor, but in light rooms is good cheer. Even in a gloomy house where the walls are dingy and brown we have but to take down the heavy curtains, open wide the window, hang brackets on either side, set flower-pots on the brackets and let the warm sun stream freely in to bring health to our bodies and joy to our souls.

Among those making hygiene a study, sunlight is regarded as equally valuable as pure air, both in maintaining health and in restoring it during invalidism.

A New York merchant noticed in the progress of years each successive book-keeper gradually lost his health and finally died of consumption, however vigorous and robust he was on entering his service. At length it occurred to him that the little rear-room where the books were kept opened on a back-yard so surrounded by high walls that no sunshine came into it from one year's end to another: an upper room well lighted was immediately prepared and his clerks had uniform good health ever after. A familiar case to general readers is derived from medical works where an entire English family became ill and all remedies seemed to fail of their usual results when accidentally a window-glass of the family room was broken, in cold weather. It was not repaired, and forthwith there was a marked improvement in the health of the inmates. The physician at once traced the connection, discontinued his medicine and ordered that the

window pane should not be replaced. A French lady became ill. The most eminent physicians of her time were called in, but failed to restore her; at length Dupeyren, the Napoleon of physic, was consulted. He noticed that she lived in a dim room into which the sun never shone: the house being situated in one of the narrow streets, or rather lanes, of Paris. He at once ordered more air and cheerful apartments and all her complaints were abolished.

Instances are without number where the health officers in the city of New York, during the heated term of summer, while visiting the more thickly populated tenements, found the confined air of rooms where children were suffering from cholera infantum, was not only stifling, but shutters and blinds were brought into use to keep out the heat and with it the sunlight. By removing them, creating a draft through the rooms and allowing plenty of sunlight, improvement was noticeable in many cases and in most the result was immediate. The lungs of a dog become tuberculated (consumptive) in a few weeks if kept in a dark cellar. It is a well-known fact that most plants become weak, pale and straggling if no sunlight falls upon them. For many other reasons than the topic we are now treating, our houses, or rather the manner in which they are occupied, should be turned upside down. The kitchen and laundry should occupy the attic story; the basement, which is used for dining room and kitchen and in many cases being occupied as a sitting room, although not intended for such, should be used for the storage of coals, rubbish, etc., and for furnaces.

BATHING.

When the surface of the body is wetted with cold water the skin contracts, the size of its blood-vessels becomes diminished, and part of the blood which would have circulated through the skin is suddenly sent to the deeper organs. The nervous system is also stimulated, the breathing becomes quicker, and there is a more energetic action of the heart and blood-vessels; consequently there is a rush of blood back to the surface, producing the flushing and sense of warmth

familiar to all. This condition, the "reaction," is the first object and purpose of every form of bathing. By the reaction, the internal organs are relieved, the breathing is lightened, the heart is made to beat freely, the mind feels calm and strong, the tone of the muscular system is increased, the appetite is sharpened, and the whole organism feels invigorated. If this reaction does not come on quickly the mode of bathing adopted can do no good, and may even be unsafe. The man or woman whose fingers or toes become blanched and benumbed for a time after bathing is not in a fit state of health for the particular sort of bath that has produced such a result. Some other less trying mode should be employed.

When a man gets up out of a warm bed and tumbles suddenly and without any preparation into almost ice cold water, I confess I consider it a feat to wonder at rather than imitate. Such bathing is the result of training and belongs in the category of gymnastics. It is one of the fantastic tricks that men play with their constitutions, like walking a thousand miles in as many hours, running races that would be trying for a greyhound, or allowing people to break paving stones on their chests. The only quite safe bath for an ordinary man or woman, without training, for all the purposes of cleanliness, and for bringing on the reaction, is cold sponging, either with or without previous hot sponging. The process can be varied in many ways, according to the feeling and state of health of the bather, and no one need cease to have baths altogether because too delicate for the common practice, or because there is not a bathroom in the house. All that is required is an ordinary portable bath or a large "mug." A small quantity of warm water may be put into the bath, just enough to keep the feet warm. Then the cold or cool water supplied from a basin or the tap is to be applied by a sponge to the nape of the neck, in order to send a stream down the hollow of the spine, and this completes the process. Everything, including the process of drying, should be done without loss of time. This is all that is necessary for health. A man who is ambitious and very robust may reach the profoundest depth of a plunge without a

fit of apoplexy ; but there is no evidence to show that he is better off than his less ambitious contemporary who acts more cautiously.

INDOOR EXERCISE.

We believe that Wood's Parlor Gymnasium offers the most complete system of physical exercise ever devised for home practice.

The following are a few of the advantages derived from its use :

It calls into direct action all the muscles in the upper part of the body, and chiefly those which are generally neglected by persons of sedentary habits. It corrects the stooping posture so frequently noticed in young persons, and imparts an uniform degree of strength to the muscles supporting the spinal column.

To those who are afflicted with dyspepsia, indigestion, nervous debility, weakness of the chest, lung and liver complaints, etc., it may be used with certainty of the most gratifying results.

It can be graduated to the use of the strongest man or the weakest child ; is admirably adapted to the use of invalids and convalescents, where general exercise is desirable. To ladies and children especially the exercise will be found of the most invigorating character.

It can be attached to the door-casing of any room, requires but little space, and can be taken down when necessary in a moment.

It is highly recommended by leading physicians and all those who have made the subject of physical exercise a study.

It is easily adjusted to any room. The directions for putting up are simple:

Insert one of the screw hooks into the door-casing about eight feet from the floor. Place another into the floor directly under and on a line with the upper one, and about 3 to 4 inches from the wall. Use a small gimlet to make the holes. The lower hook is intended to receive the ring into which all the rubber springs are attached. The upper one receives the ring attached to the iron pulley.

The small holes in the side of the pulleys are intended to receive the oil necessary to lubricate the wheel, one drop being sufficient at a time.

To demonstrate its range of movements and as a guide to those

who now do or may hereafter possess the Parlor Gymnasium, a description of a few exercises are inserted.

EXERCISE 1. The performer will grasp a handle in each hand and take a position about four feet in front facing the instrument, right foot in advance. Keep the arms perfectly straight, (knuckles up,) and by a quick and vigorous pull down, force the arms as far back as possible, see fig. 1, (solid part,) then swing the arms quickly forward and repeat the movement twenty times. N. B. At first each movement should be executed twenty times, but with practice they may be increased to one hundred. The resisting power of the spring may be increased by simply taking a position a little farther from the instrument, or it may be weakened by removing one or more strands from the snap hook *E*. Thus a child may use one strand, a boy or girl two, and a full grown person all three.



FIG. 1.

EXERCISE 2. Separate the handles right and left, keeping the arms perfectly straight, and forcing them on a line horizontal with the shoulders, as seen in dotted arms fig. 1. The movement may also be executed by carrying one arm forward while the other is going back.

EXERCISE 3. Swing the arms upward over the head, throwing the shoulders back and bending the left knee, as seen in fig. 1 (dotted lines.)

EXERCISE 4. Combinations of first and third movements executed alternately; as the arms are brought down to the front, the body is inclined forward, and when carried up over the head it is inclined backward.

EXERCISE 5. Place the heels together, keep the legs perfectly straight, bend the body forward, and force the handles down towards the feet without bending the knees, then spring up and throw the arms over the head, bending the body slightly back. Repeat the movement twenty times.

EXERCISE 6. Pull both hands simultaneously to the right side, turning the body in the same direction, but keeping the feet firmly



FIG. 2.

in position, toes pointing to the front, see fig. 2. Repeat the movement twenty times, then carry the arms to the left the same number; finally swing them right and left alternately. Be careful to keep the body erect and avoid bending downward. A quick and vigorous pull will be necessary in order to force the handles well back and it is also desirable that the movements be executed with considerable rapidity.

EXERCISE 7. The performer will take position seen in fig. 3, dotted lines, feet well apart and the left in advance. Swing the right arm over the head, at the same time half face to the right, throwing the weight of the body upon the right leg, bending it at the knee, and force the handle well forward. (See fig. 3.) The hand must be carried well back over the head to allow the cord to come down behind the neck. Return to first position, and execute the movement twenty times, then place the right foot in advance and swing the left arm over the head the same number.

EXERCISE 8. Take position with the back to the instrument, right foot in advance, body well braced by the left leg, and arms perpendicular over the shoulders, see fig. 4. Force the handles forward and down without bending the elbows, incline the shoulders forward and

push the handles as far to the front as possible. Return to position, but be careful in raising the arms not to relax the muscles too suddenly, otherwise the springs will pull the body backwards and off balance. Repeat the movement twenty times.



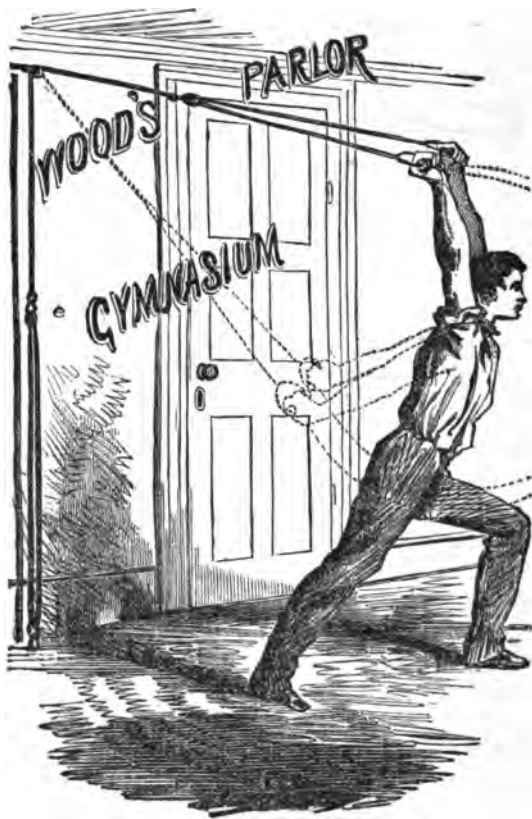
FIG. 8.

EXERCISE 9. Take position as in last exercise, placing the arms as seen in dotted lines downward, pull the handles forward at arm's length until the cords are brought up under the shoulders, swing the arms back to position and repeat the movement twenty times; the arms may also be brought forward alternately.

EXERCISE 10. Combine the last two movements in one, describing the arc of a circle with the handles; keep the arms perfectly straight, incline the body forward as the arms are extended to the front; separate the hands sufficiently to allow the cords to pass outside of the shoulders without touching them. Execute this movement slowly at first until a correct uniform motion is obtained.

EXERCISE 11. Take position as in exercise 9, but raise the arms a little higher; separate the handles right and left, force the arms to a horizontal line with the shoulders, continue the movement forward

until the handles are brought together at arm's length in front of the chest, the cords resting against the shoulders, then separate the arms right and left, and swing back to position. This movement may also be performed by bringing the arms forward alternately, keeping them perfectly straight.

**FIG. 4.**

EXERCISE 12. The performer will take position seen in solid part of fig. 5. Elbows well back and hands close to the body under the shoulders, right foot in advance; extend the arms to the front and throw the shoulders forward twenty times. Keep the feet firmly in position; in returning brace the body well up with the left leg to avoid being pulled backwards. Execute the movement alternately, first extending one arm, and as it returns extend the other.



FIG. 5.

EXERCISE 13. Take position facing the instrument at a sufficient distance to put a slight strain upon the spring, the arms as in dotted lines, see fig. 6. (The performer will observe that the instrument has been inverted, the spring being attached to the upper hook and the pulley to the lower one; by this arrangement we gain some very valuable exercises.) By a quick pull upward; at arm's length carry the handles over the head, at the same time incline the shoulders backwards, throwing the weight of the body on the left leg. It will be observed that the knuckles are up at the starting point in the figure, but the movement may also be executed with the knuckles down, or alternately up and down.

EXERCISE 14. The performer will take position with the back to the instrument, arms as in dotted lines, fig. 7. Elbows close to the body and hands in front of the shoulders. Extend the arms forward and up, moving the body well forward upon the advanced leg; in returning to position brace the body well up to avoid being pulled backward. The movement may also be executed by extending the arms backward instead of holding the hands in front of the shoulders, or the arms may be thrown forward alternately.

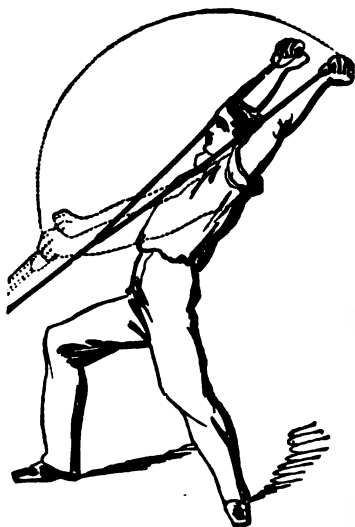


FIG. 3.

handles well back until they are on a line with the chest; bend the body well backwards, but be careful not to overbalance it. The instrument must be in the inverse position, as in Exercises 13 and 14.

Many other movements may be executed upon the Parlor Gymnasium; a variety of new combinations can readily be created by the performer, according as fancy may dictate or taste direct, but sufficient has been given to develop the resources of the instrument.

In the Parlor Gymnasium is the means for imparting a good foundation for health and vigor, and that enjoyment of life to which none but the healthy can aspire.

EXERCISE 15. This movement is similar to, and brings into action all the muscles affected by pulling a pair of oars. The pupil will take a seat upon the floor or low bench (an ottoman will answer the purpose admirably,) legs extended to the front; stretch the arms well forward towards the feet, then pull the



FIG. 7.

A few words with reference to the best time for exercise. A very free and general use of the Gymnasium may be indulged in before performing the morning's ablution, and also before retiring at night. The middle of the day is considered by physiologists the best time at which the greatest amount of exercise should be undertaken; but if this hour is not convenient, then during the evening, as the muscles, if fatigued by the exercise, will sooner have opportunity for rest.

To those who are unaccustomed to Gymnastic Exercises these movements will have a peculiar effect at first, but regular practice for a week or two will terminate all disagreeable feelings of the muscles.

When these exercises are undertaken as a restorative, it is of the utmost importance to guard against exposure; never suffer the open pores to be too suddenly closed by cold. A copious ablution with cold water and sponge, and then a hearty friction with a rough towel, has in all cases a beneficial effect.

RESULTS OF EXERCISE.

Dr. Burcq of Paris, as the result of minute investigations, comes to the following conclusions in regard to the capabilities of physical growth by gymnastic exercises.

First. An increase of one-third and even one-half in muscular force, with a tendency to an equilibrium between each side of the body.

Second. An increase of at least one-sixth of the pulmonary capacity.

Third. A diminution in volume simultaneous with an increase in weight, equal to about fifteen per cent. This increase is confined exclusively to the muscular system.

The average muscular strength of women is scarcely half that of men; while at the same time there are individuals of the weaker sex who approach much more nearly the strongest among men, and who exceed considerably the average strength of men.

Women till the soil in France, wheel coal in Belgium, push loaded

hand-carts in Germany, and pump water and carry bricks and mortar up ladders in Austria.

SLEEP.

How often we have execrated the officiousness of friends and attendants; who aroused invalids from sleep to give them food or medicine, or who awakened those who were exhausted to eat dinner when the sleep was more precious than the food. There is no economy of time or life, and certainly not of health, in these days, in abbreviating the period of repose. Much of the early rising enjoined in books is humbug. Our first acquaintance with dyspepsia was the result of being kept awake of nights, one season when young, on purpose, by a companion who had a whim that we slept too much for our spiritual welfare. It had the ulterior result of leading us outside of that sort of religion, as well as of improving the nervous and digestive systems.

Even sleeping in church or in crowded assemblies is often beneficial; a person breathes less when asleep and is not so liable to be poisoned with bad air.

Our favorite panacea for ailments is sleep. With the illustrious Sancho we invoke blessings on the man that invented it. Dr. Young was critically correct in styling it "tired nature's sweet restorer." Emanuel Swedenborg declared that in sleep the brain folded itself up and the soul journeyed through the body repairing the wastes of the previous day. The effect on the mind is even more wholesome. If we have been shamed, insulted, worried, grieved or angered, so that the blood is poisoned, sleep soothes the spirit, relieves the anguish, refreshes and cleanses away the soil of acquired foulness. Insane persons are in a fair way of recovery when they sleep naturally. In sleep the sick become convalescent, ulcers granulate and lesions are made whole. So true is this that ulcers, otherwise so intractable as to be supposed incurable, are induced to heal by keeping the patient under the influence of opium. When we are weary and exhausted we are feverish. Bathing and eating to a certain degree relieve this

condition, but never completely. Yet plenty of sleep will enable us to do with less food. "Who sleeps, eats" is a French proverb. Horace Greeley died for want of sleep. (A. Wilder, M.D.)

AFTER-DINNER NAPS.

No wonder if half the world knows how pleasant it is to take an after-dinner nap and what a relief it is to the overburdened brain or stomach. We used to know a lawyer who took his nap every day after dinner on three chairs, and that lawyer, if he continues the practice, will die an old man. If there is any one time when a man is forced to exert himself to work, whether in muscular or brain labor, it is after the noon-day meal. If all men could only rest, not one hour but two hours, and put the extra time on the closing hours of the day, what an improvement would be made in their health. Whether he be a farmer or a mechanic, or a professional man, a good rest after dinner leaves the man in a better condition for hard labor than even in the morning.

We once worked for a farmer in harvest, who always made an agreement with his workmen to work ten hours a day, and from twelve o'clock till two no work was to be done unless in case of emergency, a threatened rain or something that required extra exertion. Didn't we have glorious times sleeping under trees after dinner! We always used up three-quarters of an hour at the table and then slept one hour and a quarter during the heat of the day. The result was the men were never overworked and the farmer got more labor from his men than any of his neighbors, though their men often worked twelve hours a day. When two o'clock came the hands were all in good trim, completely rested out and they could do double the work with more ease than if they had commenced work at one o'clock. A single hour's rest at the proper time worked wonders with them. (Peoples' Ledger.)

SLEEPING TOGETHER.

Parents and friends ought to oppose as much as in their power the sleeping together of old and young persons, of the sick and healthy.

An old weak person near a child will in exchange for health only return weakness. A sick mother near her daughter communicates sickly emanations to her; if the mother has a cough of long duration, the daughter will at some time also cough and suffer by it; if pulmonary consumption, it will be ultimately communicated to her child. It is known that the bed of a consumptive is a powerful and sure source of contagion, as well for men as for women and the more so for young persons. It need not necessarily be a contagious disease as generally understood. Debility is "catching" and one disease may develop another in the sleeping companion.

CLOTHING.

The following requisites should be met in order that our apparel may be the most conducive to health :

1st. *Equable warmth and protection.* Garments should not be doubled about the waist or abdomen, as is now so common with both sexes.

2d. The warmth necessary in cold weather should be secured with the *least amount of weight.* To double and triple the amount of clothing about the chest, shoulders and neck, does not increase general warmth, but simply overheats a single part.

3d. It should be so loose as to *permit of the freest motion* in every direction. Respiration will then be facilitated and the superficial circulation of blood be free and undisturbed.

4th. The dress should be so constructed and fastened as to be *put on and removed with the greatest facility.* In time of fire and occasions when from press of business, sickness in the family or other causes, the amount of time given to sleep is necessarily limited, the gain is evident. Sleep is both sounder and more refreshing when the clothing worn for hours, is changed for the night dress. Clothes easily changed cause the least annoyance and fatigue upon retiring, and allow easy adjustment by the physician in case of injury or accident.

5th. Clothing must be a bad conductor so as to store up in itself the heat that leaves the body, and thus transfer the point from which

our heat radiates from the surface of the skin to the outside of the clothing, or to some point in its substance. Experiments have proved that material made of silk or cotton allows more heat to pass through it than material made of wool; and so the woollen material is better than silk or cotton as clothing. Again, it has been proved that any material when on the stretch, by being tightly drawn, allows more heat to pass through it than when it is loose; and further, it has been found that by leaving some space, say from one-third to one-half an inch, between two layers of the same material, it lessens very considerably the outward flow of heat. This space of from one-third to half an inch may be taken to represent the space between comfortably fitting garments; and therefore we learn that to draw our clothes tightly round the body is to deprive them of a large proportion of their power of preserving our heat; and so if we wear our clothes tight we shall require more of them to keep ourselves warm than if they fitted more closely. In proof of this is the effect of tight gloves and boots upon the hands and feet in winter.

Again, our clothing must allow free ventilation of the skin. This may seem contrary to your ideas, for clothing is generally considered necessary to keep the air from us, whereas it has been proved by experiment that those clothes which allow most air to pass through them keep us warmest. If our clothing kept us warm in proportion to the power of excluding air from the body, kid would keep us a hundred times warmer than flannel, while every one knows by experience that it is quite the reverse. Successive layers of the same material have very little influence in diminishing the ventilation, so that while we use several layers of woollen clothes to prevent radiation, we do not interfere with the proper ventilation of the skin. It is by interfering with such ventilation that waterproof fabrics are so unpleasant and dangerous to wear.

There is another point which it is necessary to consider as regards our clothing, viz., the effect which water has upon it. It is evident that all textures lose their ventilating and increase their conducting power, more or less, when wet. Linen, cotton and silk, soon be-

come air-tight by wetting, whereas flannel becomes so only after a long soaking. This explains why we feel so much colder, and take cold more readily with a wet linen than with a wet flannel shirt next to the skin.

He who walks must be clothed differently from him who drives, and she who dances from him who pipes; but when the walker stands and the dancer ceases to dance, they should have extra covering to prevent a chill.

The clothes should sit comfortably on the body, all weight being suspended from the shoulders alone, and whoever feels any oppression from his clothes, even on the shoulders, may rest assured that he is either improperly clothed or the subject of some unsuspected disease.

It is a sad sight to the physician's eye to see a child from two to six years of age with no protection or covering to the legs between the knees and ankle.

With the exceptions of the head and feet, the remainder of the body is over-heated. A fine flannel suit for summer and heavier for winter should cover the whole body, except the head, neck, hands and feet, and the latter should be well and comfortably clothed. We repeat, keep the feet warm.

We dress by the calendar to an insane extent, instead of going by the actual state of the weather. We are always disappointed with our spring season. Isolated fine days induce us to doff our warm clothing, in spite of repeated experiences of the variable nature of our climate and its consequences. These consequences, however, affect not the skin itself so much, but the various organs of the body through the skin, appearing in one as congestion of the lungs, in another as a quinsy, in another as a cold in the head.

Change of clothing must depend on the habits of the individual; but however much anyone may wash, the underclothing ought to be changed every week. The flannels absorb the perspiration, and if the skin be not regularly washed the flannel becomes full of refuse matter, and at the same time loses its power of retaining

heat. Those who wear their underclothing too long, and do not wash their bodies frequently, become walking nuisances, continually evolving noxious effluvia. When any number of such individuals meet in a room, the atmosphere is quickly rendered unpleasant to the sense of smell—and when air can be smelled it is bad indeed.

WOMEN'S DRESS.

The invalidism and consequent uselessness of women is increasingly apparent. And yet while the fact is generally acknowledged, and, by some, accounted for, great is the wonder when bright young girls become afflicted with some disease common to the sex. The surprise would vanish if one would estimate that five, ten, twenty or more pounds of dress goods were closely girded around the waist, dragging upon the delicate, easily-displaced organs within. The horror awakened by this fact would be increased if one would further consider that it is as unusual for a woman to have a *natural* form, as for a man to have an unnatural one ; that a woman's form is shaped in an unnatural mould by a stiff, narrow-waisted corset ; that this thing and about twenty thicknesses of other material in the form of gathers and bands produce heat enough about the waist to keep the internal organs in a state of inflammation ; that the extremities are thinly covered, and in winter are liable to cold or wet ; and that the clothing generally is so arranged that the free use of the limbs in any active exercise is impossible.

But though a perfectly fashionable attire is so evidently a weariness to the flesh, yet women—especially the young and fashionable, are slow to adopt a sensible reform. It is much to be desired that such could hear the experience of those that have suffered, and learn that they cannot lay one destructive finger upon the temple of their bodies without paying for it in pain and anguish ; that to women who have weakened and deformed their bodies by tight waists and heavy skirts, the physical trials which come to most of the sex are agonizing, exhausting, and often fatal. If they knew all this they

would admit that the shoulders and not the hips should support the weight of the clothing, and a healthful dress is to be preferred to a fashionable one.

To remedy the evils above referred to, some of the great-hearted, large-brained women of our land have invented under-garments which shall clothe the whole person from head to foot with an even warmth, without bands and without weight at the hips, so that one need not feel as though she were coming apart in the middle.

The first suit—of merino or flannel or gauze—is a single garment extending from throat to wrists and ankles. The chemilette—a somewhat similar garment of muslin—comes next. The skirts may be gored so as to be perfectly plain at the top and buttoned upon the chemilette. The emancipation waist which has in a great measure supplanted the chemilette, generally meets with favor wherever it is examined; probably because, in addition to its being so healthful and convenient, it is pretty and takes the place of a corset without its hurtful features. It is made high-necked in order that it, and all the garments appended to it, may hang from the shoulders. This might make it seem warm for summer, but it is not found to be so, because it relieves one from the oppressive heat of bands about the waist. It is sloped out to fit loosely to the form, comes down over the hips, and is furnished with three rows of stout buttons, at different intervals below the waist line, which support the lower garments and dress skirt. All this applies to undergarments.

The outer dress should be sufficiently loose and light for comfort and health, and simple enough for dignity, but otherwise it may be regulated by taste and the modes of the day. (Mary L. Griffith.)

MOURNING SUITS.

The poorest of the poor will wear mourning when a relative dies, and the expense thus incurred reduces many families to the direst extremity. All of us would do well to remember Hamlet's words as to mourning:

"'Tis not alone my inky cloak, good mother,
Nor customary suits of solemn black,
Nor windy inspiration of forced breath—
No, nor the fruitful river of the eye,
Nor the dejected 'haviour of the visage,
Together with all forms, moods, shows of grief,
That can denote me truly : these, indeed, *seem*,
For they are actions that a man might play ;
But I have that within which passeth show—
These but the trappings and the suits of woe."

Let those, then, endeavor to alter this costly and barbarous fashion whose example is likely to be followed, and by-and-by poor people will think it no want of respect to the memory of their dead relatives to go abroad in their every-day clothes. Let us mourn in a way that "passeth show," and not in any way which "a man might play." The experiment has been tried and found to act admirably by the Society of Friends, and society in general would do well to follow such a good example.

The following has lately been circulated: "Funerals should be conducted and mourning worn without the dismal paraphernalia of hat-bands, scarfs, plumes, heavy crape trimmings and the like, which are quite inconsistent with a hopeful belief in a future state, involve unprofitable expenditure, inflict severe hardships upon persons of limited means and neither mitigate grief nor manifest respect for the dead."

In our modern fashion of using flowers on these occasions we have lost an old time sweet and charming simplicity and have adopted instead a sickly sentimentality which finds expression in such stupid symbolical and allegorical designs as crosses, lyres, harps, anchors, crowns and broken columns made of wire-work and composed of white flowers. Imagine Milton apostrophizing his Muse to bring him a twenty-dollar crown and anchor, or Hamlet giving an order to the undertaker for a hundred dollars worth of allegorical floral de-

signs. Simplicity, whether of the heart or in aesthetics, always indicates strength and depth of feeling; but the elaborate and costly designs of the boquet-makers only indicate depth of pocket on the part of the mourners who publish it to the world by attaching their cards, thus aggravating their bad taste and rendering it disgusting.

REQUISITES FOR DWELLINGS.

See that there is free access of air to the front and back and that there is nothing to prevent its free circulation. Carefully avoid houses built back to back. There should be free ventilation for every occupied room, which should have a fireplace and a window opening directly on the external air and should not be lighted by a borrowed light only. Every window should open both at the top and bottom, but especially at the top.

Have the rooms of good height—nine feet at least in the smallest houses if you possibly can.

There ought to be cross ventilation if possible between the water-closet and the rest of the house, and at any rate there should be free communication by a window between the closet and the external air, and this window should not be too near a bedroom window.

There should be proper water supply and if it has to be stored in a cistern this ought to be arranged for easy inspection and cleansing.

There should be proper arrangements for the collection, with a view to speedy removal, of dry refuse which ought to be kept dry. All liquid and solid offensive matters must be speedily got rid of. They ought not to soak into and pollute the soil near the dwelling. The dry plan, with frequent removal, answers well and it is said that typhoid fever is less prevalent when this method is well carried out than in sewered towns with the water-closet arrangement. The late Dr. Parkes, in the little book on public health, written during his last illness, says: "At some point between every house and the main sewer there should be complete air disconnection, so that any reflux of the sewer air may pass into the open air and not into the house.

If this were done the spreading of disease by town sewers would be impossible."

These words contain the pith of sanitary science on the question of drainage.

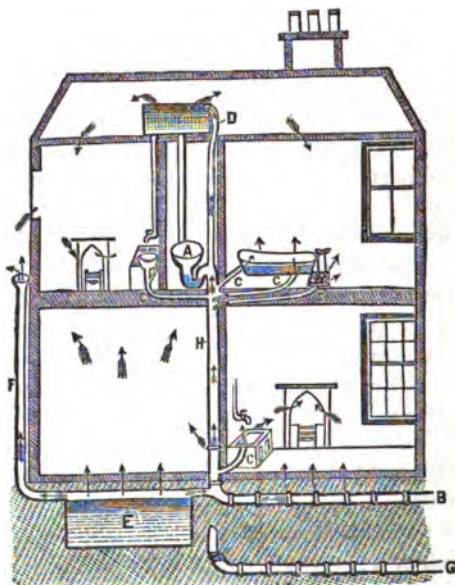
You should take care that your house is so situated and so built that it may be dry. And beware of those pests of our large towns, the balloon-frame house builders, who run up tenements in the suburbs in the slightest possible fashion, whose sole aim in building is cheapness, and the evasion of every regulation for the protection of unhappy tenants.

If the walls are papered see that all previous papers have been stripped off. The old papers and the colors and the paste become in time hurtful and are apt to breed vermin. You should know, also, that many of the pretty cheap papers contain a large quantity of arsenic—not the green ones only, as is commonly supposed—but those of other colors also. This arsenic is so loosely adherent that it is being continually rubbed off as fine dust, and often produces great injury. In buying a paper, be careful, then, and do not trust too much to the word of the seller, who may know no more about it than you do.

I must add a word in favor of cleanliness, which will greatly aid keeping the air of a room pure. Soap and water, beeswax and turpentine, with plenty of scrubbing, not only made your grandmother's furniture, "in the brave days of old," shine like a mirror, but was an index of the cleanliness in everything else, which made the cottage, as you entered from the honeysuckled porch, seem the abode of health and happiness, and of all things sweet and pleasant.—
(Henry Simpson, M.D.)

DRAINAGE.

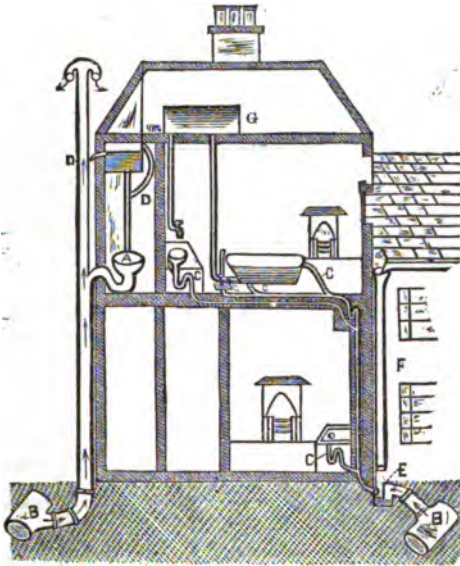
Dr. J. T. Gardner, in an address before the American public Health Association, speaking upon the subject of the relation between topography and health, says: "For a hundred years a connection between certain topographical features and malarial fevers



HOUSE WITH EVERY SANITARY ARRANGEMENT FAULTY.

(after Teale).

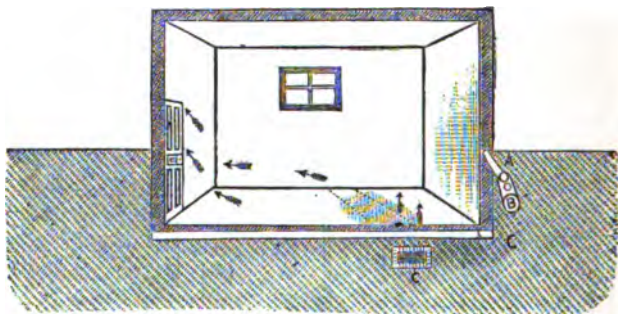
- A** Water-closet with soil-pipe in middle of house.
- B** House drain under floor of room.
- C C C C** Waste pipes untrapped, communicating directly with drain.
- D** Overflow pipe of cistern turned into soil-pipe and acting as ventilation of drain.
- E** Rainwater tank under floor, with overflow untrapped into drain.
- F** Fallpipe communicating with drain opening under bedroom window.
- G** Drain under floor with joints unluted, and pipes laid without a fall ; showing leakage at every joint, and at the junction of soil-pipe with drain.



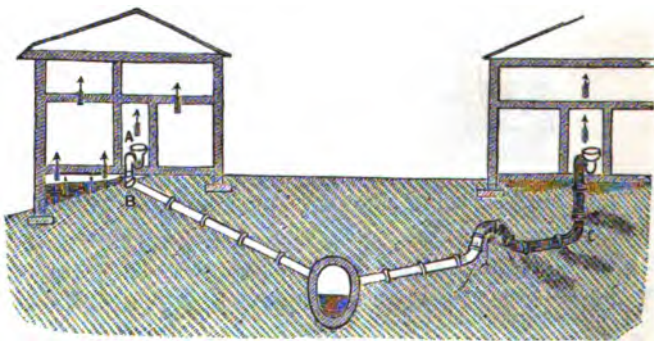
HOUSE WITH FAULTY SANITARY ARRANGEMENTS AVOIDED.

(after Teale).

- A** Water-closet with soil-pipe outside the house, and ventilated by a large pipe carried up and away from all windows or chimneys.
- B** House drains outside house.
- C C C C** Waste pipes trapped, and disconnected from drains by a gully **E**.
- D** Overflow of cistern into open air, or supply pipe.
- F** Fallpipe near bedroom window discharging into a gully, not into the drain.
- G** Domestic cistern is separate from water-closet cistern.



Soil-pipe **A** imperfectly joined to pipe **B** pouring all the sewage of the house into the soil. Pipe **B** close to wall of house, and above the kitchen floor. Wall and floor damp. **C** an old surface drain filled with leakage from sewers.



Soil-pipe **A** missing drain **B** and pouring all the sewage into a triangular space below the ground floor of the house.

Soil-pipe **C** blocked as far as a rise in a drain which, to avoid cutting through the rock, was carried by curved tube over the rock.

has been noticed. Some marshes produce miasma, was the sum of past observations; but malaria appeared accompanying such varied topography that no law of its production was seen until latterly, when character of rock and soil is shown to be as important as conformation of surface in promoting or suppressing malarial fevers, and also rheumatism, cholera, diphtheria, pneumonia, consumption, and many other of man's worst ills. *These diseases appear to be dependent both upon circulation and excess of soil moisture.* The connection of geological and topographical structure with health will then be evident, when it is remembered that *natural drainage results from combined action of configuration, character of soil, constitution of underlying rock, and the form of its surface.* These four elements regulate natural drainage. Each must present favorable conditions, or deadly waters will accumulate on the surface or in hidden strata. *Remember, too, that no plan for artificial drainage can be completely successful unless based on a thorough comprehension of the natural drainage system of the area under treatment."*

SEWAGE AND DRAINAGE.

We can better describe what is wanted in sewage and drainage by describing some of the errors that exist in this matter, by quoting at length an article that appeared in the *Christian Union*:

"Several years ago, the writer of this article had occasion to find a new domicile in one of the favorite suburban resorts of New York city people, and finally settled upon a large cottage in a very healthy town. This cottage was better ventilated than even wooden houses are likely to be, but as pure air always seemed cheap to the writer, even though an extra large coal bill was incurred, the cottage seemed particularly desirable by reason of the fault alluded to. When winter arrived, however, not even loosely framed doors and rattling windows admitted enough pure air to keep the occupants awake and bright through the short evenings of a family which always retired early. The writer occasionally imagined that he detected an unpleasant odor at the register, and some friends to whom he mentioned his supposition, suggested dead mice in the

pipes which conveyed heat from the furnace to the registers ; others suggested that a cast-iron furnace was at the bottom of the trouble ; still others (who were promptly withered by a glance at the writer's better half) suggested a dirty cellar. The writer finally found that the cellar was occasionally damp—and he noticed that its floor sloped very gradually toward the centre. Putting both facts together, he was not surprised to find a drain, *directly under the furnace*, to carry off water ; this drain led to the cesspool, and when the furnace was in operation the foul gases of the pool were sucked up by the furnace and conveyed through the house. The house stood on a good street, was built for occupants with purses of reasonable length, and passed as one of the best houses that could be hired in the village.

“ Moving from the house to another which had long seemed attractive, the writer soon found that unless the cellar windows were always open, and a good draught passing through them, a bad smell would find its way into and through the house. An examination of the cellar showed that this receptacle was very damp, though why it should be was not apparent, for a drain started from one corner, and ran to a brook not far away, and at a respectable descent. It was finally discovered, however, that the water in the well (which was near and in front of the house) was often above the bottom of the cellar, and that though the house stood at the bottom of a valley, it had no exterior or bottom protection in the shape of drains. It was simply impossible to keep the carpets, bedding, walls, etc., of this house from feeling damp, even when a steady fire burned in the furnace; and the loss of a child was attributed by physicians to malarious exhalations from the cellar. The trustees of this house were practical plumbers and members of a public health association.

“ A handsome high-priced house was then purchased from a rich and reputable citizen, under whose personal supervision it had been built. The ground on which it stood was rather low, but a well-cemented foundation-wall and cellar seemed to defy dampness,

while a system of traps seemed to shut off unwholesome exhalations from waste water. After the first heavy fall of rain, however, the water from the well was unpleasant to both the palate and nostrils; the fault being attributed to the surface drainage, the curbing of the well was raised a little. Finally, at the end of a very dry month, the taste and odor disappeared, and the last drop of water in the well disappeared soon after. Laughing at this feeble attempt of the Fates to torment them, the occupants drew upon the well-filled cistern; here they encountered odors and tastes more repulsive than they had found in the well. Fresh cement always makes water taste bad, says a practical neighbor, so the cistern was promptly pumped dry and washed out, and the neighbor aforesaid was rewarded for his suggestion by having his own well and cistern laid under contribution until the next rainfall. But somehow the faculty of that cement for spoiling water was remarkable, and we rejoiced when winter storms gave us a full well once more.

"For six months the cistern was undisturbed, except on washing days, although the well occasionally yielded offensive water; at last, however, the well failed in the dry season of July, 1876. Once more the cistern was approached; the first strokes of the pump brought water that was as brown as coffee and as offensive as stable drainage. Radical reform measures were immediately resolved upon, and a plumber engaged to apply them, with the following results: We learned that a cesspool which received all the kitchen drainage, including the water in which dirty clothing had been washed, was within two feet of the cistern and eight feet of the well; the overflow pipe of the cistern communicated with this pool, the dimensions of which pool were about two by five feet. The kitchen drainage of an ordinary washing day could not with sufficient rapidity soak into the ground out of so small an enclosure, so it flowed into the cistern, while much that went into the ground found its way to the well.

"If the experiences here recorded have befallen the lessee—a man with whom good ventilation, perfect drainage, and pure water are hob-

bles—in three short years and in houses apparently excellent, what must be constantly happening to people who are careless on these points, and who consider a house attractive in proportion to the smallness of its rent? How many householders are there, who, untiring in their efforts for the good and comfort of their families, are being steadily and successfully fought by deadly enemies underground? How many thousands of the ‘sad and mysterious dispensations of Providence’ may be traced to ignorant and unscrupulous builders and their employees?

“This much the writer has learned by sad experience—to resolutely trace unpleasant house odors to their source, to discover some cause for the evening lassitude which is common in many families, and to bringing to the physician for analysis, a sample of drinking water which seems in any way objectionable.”

BATHS.

Bathing of any part of the body is classified by some authors as a local bath. The *foot-bath* is the most common, which is bathing the feet in a pail or tub for purposes of cleanliness. Some chamber sets include a metal tub which is specially for this purpose. Its use as a medical means is alluded to, in the treatment of cold feet. The *chest-bath* to which we refer in speaking of a preventive against taking cold and the diseases of the respiratory organs, is simply bathing the body between the waist and neck with a sponge or the hands. Other local baths differ from each other only in the part to which they are applied.

Attached to most bath-tubs in cities or in larger villages which are supplied with water-works and reservoirs, is the *SHOWER-BATH*.

This is simply the forcible expulsion of water through a perforated metal diaphragm. It need not be a luxury confined to the opulent, but by a simple contrivance can be introduced into every household. A simple plan is to take a common wooden water-pail, boring through



the bottom (A) several large holes—the bottom could be removed entirely without interfering with the process; it is continued in place however to retain the strength of the utensil. Immediately over this should be nicely fitted a second bottom (B) of metal or wood not perforated. To this should be attached a staple and cord. Turning the pail bottom upward, a sheet of tin pierced with many fine holes (C) should pass over the bottom and be fastened to the sides. When the floor has been covered with a rubber or oil cloth and the bather is ready,

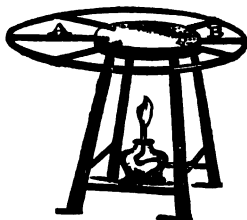
the false bottom should be put in place and the pail filled with water. The cord should hang over the side. The pail may now be hung on a hook fastened in the ceiling. A sudden pull or jerk upon the cord will precipitate the shower, which, if the holes are small, will continue for some time. This is an excellent bath to follow the Turkish or Russian bath, or even the sponge bath, when soap has been used. It is very refreshing in warm weather and will reduce temperature rapidly. Like all other cold baths, great care should be taken not to produce a shock. If the head has been wetted and the bath is first received upon the shoulder-blades and back, this may be avoided. This is a bath exclusively for the robust and is hazardous if taken by the feeble, aged or infirm.

The warm bath is generally considered the best. It reduces temperature, but not to a very considerable extent; is more generally pleasant, and in most cases agreeable. With soap, it is best adapted to remove dirt and all impurities of the surface. If taken in the morning, it insures against fatigue for the day's labor, and secures cheerfulness of disposition. If taken at night it removes the tension of the nerves and worry, and gives refreshing slumber. As a matter of cleanliness, such a bath should be taken at least once during each week. The cold bath is better relished by the fat, the corpulent and

the vigorous, who possess vitality enough to bring about reaction without much effort. All baths should be taken in soft water or rain water, and followed by brisk rubbing, with a course towel.

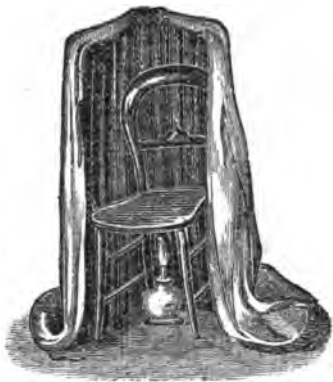
TURKISH AND RUSSIAN BATHS.

These are of great antiquity. The former originated with the Egyptians, by whom it was taught to the Greeks. The Romans learned it from them, and afterward it was adopted by the Turks and Moors. The latter has been the custom among more northern peoples. Both processes may be briefly defined as bathing the body in superheated air, the difference between them being simply that one is dry and the other moist. The latter is vapor or steam, and is to some more agreeable. In either case copious perspiration is produced and continued for some length of time. Both are followed by shampooing, spraying with water of gradually reducing temperature, brisk rubbing, and eventually by the cold plunge or shower. These baths have always been considered a luxury, and are of easy access to the wealthy, in most of our large cities. With the exercise of a little ingenuity, they can be brought with a slight expense to every household: Our plan is this: Take a common stool, or a wooden



bottomed chair from which the back has been removed, and into the sides of the seat about six or eight inches apart, bore holes three-eighths or one-half inch in diameter and about an inch in depth. Into these place wooden rods of different lengths; those at the back (B) should be four or six inches in length while those at the front (A) may be a foot or two. If you have a common hoop, lay it upon them, fasten it to the back one and saw off the others to the outer rim of the hoop. This hoop can be fastened in place by cords or pegs, or if no hoop is used a stout twine may be tied to one rod and passing

through notches cut in the ends of the other rods be brought back to the first and fastened. The object of this skeleton is to keep the drapery from the body and from the flame. Sitting upon this stool with the longest rod between the knees, blankets are fastened at the neck and pass over the hoop to the floors. Over these a quilt or two may be laid. If the neck is closely enclosed and the drapery touches the floor in a continuous circle, no air can gain admittance. If an attendant is present an alcohol or spirit lamp may be lighted and placed upon the floor under the stool. If there is no nurse,



PORTABLE TURKISH BATH.

the lamp should be placed before the drapery is arranged. In ten minutes free perspiration follows, which may be continued by the robust for some time. It is more agreeable to some to place the feet in a pail of hot water and the delicate should have a cloth wrung out of cold water, laid upon the head, or the head bathed with cold water during the bath. This bath should be followed by bathing in cold water and brisk rubbing. There is little danger of catching cold, and the cold water is more agreeable than otherwise. Perspiration follows for some time and the bather, though dressed, should not expose himself to inclement weather until the surface is dry.

The general effects of the Turkish bath are described as follows: "The results showed that immersion of the body in hot dry air produced loss of weight to an extent considerably greater than normal, amounting, on the average, to the rate of above forty ounces per hour. This was accompanied by an increase in the temperature of the body and a rise in the pulse rate, with at first a fall and then a

rise in the rapidity of respiration. The amount of solids excreted by the kidneys was increased, and, coincidentally, the amount of urea. The sweat contained a quantity of solid matter in solution, and, among other things, a considerable amount of urea. The most important effect of the bath was the stimulation of the emunctory action of the skin. By this means the tissues could, as it were, be washed, by passing water through them from within, outward. The increased temperature and pulse rate pointed to the necessity of caution in the use of the bath when the circulatory system was diseased." In such cases we prefer the

SPIRIT-VAPOR BATH OR ALCOHOLIC-VAPOR SWEAT.

THIS IS THE BATH FOR THE SICK. The patient is, of course, in bed, and being in a prone position, we never have that fainting to which one is exposed who sits in a chair and has the dry heat applied by contact with heated air. Its application is so simple that we are surprised that it is not universally employed. All that is necessary



RUBBER BAG.

is a *rubber-bag, hot water and alcohol*. This bag, when not in use, is nearly square and flat, and takes up but little space. A handle is attached for convenience in filling. A metal screw with washers, prevents leakage. To prevent spilling, a rubber cup surrounds the mouth. *No family should be without the RUBBER BAG*; its usefulness is manifold. Those troubled with cold feet in winter, which prevents sleep, or the sick or aged with impaired circulation of blood, are emphatic in its praise. That the touch may be more pleasant, we cover it with flannel. To afford heat, it is partly filled with boiling water and

closed. If filled completely, it does not adapt itself to the part in contact. Another advantage is that it holds the heat for hours, *through the whole night*. We will warrant that any one using it once will never be without it.

For medical purposes it is filled with hot water as usual, and over the flannel is sprinkled or poured a tablespoonful of pure alcohol. It is now placed between the feet or knees. The alcohol is driven off by the heat and its vapor surrounds the patient. The skin becomes flushed, and in a short time gentle perspiration follows. If desired, this may be continued for hours without inconvenience. It is a most important and efficacious method of overcoming local inflammation. Congestion of the lungs, pleura, kidneys, uterus, etc., are easily and readily overcome. Blood poisons and other irritative substances in this vital fluid find exit through the millions of pores on the surface. In fevers, of whatever kind, it is an invaluable remedy. In scarlet fever we have no dropsy or constitutional prostration follow when it is used. The kidney troubles especially, which so often form grave complications in this disease are missing, because these organs are relieved of congestion and the flow of urine is not discontinued, or the suppression occurs only to a limited extent. "In cerebro-spinal meningitis, in inflammation of the bowels, of the kidneys, in those congestive chills which are so frequent in the south-west, it constitutes a most valuable abortive treatment, arresting the disease at once. Judiciously and early applied in yellow fever, we cannot see why it might not even prevent that immense congestion and consequent disorganization of the blood-vessels of the stomach and liver, which constitutes the fatal features of its pathology. Keep the surface warm and the peripheral blood-vessels turgid, and can you have black vomit and softening of the brain? We doubt it." In disease more than one bag may be necessary.

Wet Sheet Pack. This comes nearest to the spirit-vapor bath. The amount of diseased matter remaining in the sheet after its operation gives but a faint idea of its intrinsic worth. There is not a disease, constitutional in its character, but is due, in a great measure, to blood impurities—*blood-poisoning*. The practice among physicians of giving emetics, purging drugs and remedies to stimulate the kidneys, is to carry away these impurities. It does so to a limited extent. But why forget the skin, the greatest of emunctories?

Spread over the bed a rubber sheet. Over this lay a cotton wadded quilt, then a blanket or two. Take a coarse cotton sheet, and gathering an end into each hand, immerse it in hot water. Withdraw it, and after squeezing it sufficiently to stop dripping, spread over the top blanket. The person should immediately lie upon the centre of this, upon the back, so that the top of the sheet is on a line with the ears. With the arms at the side, quickly draw one side over, enclosing carefully every part of the body, fitting it like a glove. Then draw the other side over and wrap the body as perfectly. Follow with the one blanket and then with the other in the same manner and as speedily as careful and proper packing will allow. Particular care must be taken that the neck is well enveloped, so that no air can be admitted. Over these a cotton quilt may be wrapped. The ends of the blanket can then be folded under the feet. If the feet are cold, apply a hot brick or the rubber bag above mentioned. Great stress is laid on the rapidity of the packing in order to prevent the cooling of the sheet, and, as a result, the chilling of the patient. All uncomfortable feelings disappear, and this is followed by a most pleasant soothing sensation, and soon after by sleep.

Compresses. The compress is made of cloth in three or four thicknesses, preferably of flannel, but of any material. A towel folded lengthwise and then in two is common, and generally most available where used for applying heat and cold through the agency of water.

These take the place of the old fashioned *poultices* and are much more agreeable both to nurse and patient. They are generally used in local pains, such as rheumatism, colic, painful menstruation, neuralgia, injuries and inflammatory swellings.

For all the ends to be accomplished by the compress and for the many other purposes to which it may be applied, we greatly prefer the RUBBER BAG. These are made of different sizes, but the most useful is about a foot square. Even this bag is improved upon by exactly fitting to it a flannel cover, which may be sewed up completely, or left open at the bottom, with enough material on one side to make a flap which may be secured with safety pins or cloth-covered buttons.

MARRIAGE.

AN

ESSAY PRESENTING THE SUBJECT

HISTORICALLY, PHILOSOPHICALLY

AND PHYSIOLOGICALLY.

To be married, perhaps we should say instead, to be mated—is the dream of the maid and the ambition of the man. It constitutes the ideal of life. It would be ill to have it otherwise. The consideration which is bestowed upon the conjugal alliance is an infallible index of a people's culture and civilization. In whatever period we scrutinize the progress of a race the key is quickly furnished us when we have ascertained the footing on which their men and women associate. There are many phases to this relationship, for the families and tribes of mankind have existed in different regions and conditions, to say nothing of the varied circumstances of race and type. We have it as a sacrament, as a covenant, as a contract, as a private relation. There has been and still continues the subordination of one to the other, as the vassal to his baron; and again the law and custom have tended to establish a condition of equality.

To explore the ways by which mankind attained such different social altitudes would require the investigating of the entire history of civilization. It would astonish many who clamor so much about modern degeneracy and decry our culture as totally artificial, if they should be admitted to a view of the degraded condition from which

it took its departure. An absolute selfish egotism is the first conception that we as individuals have of life; and something like it appears to have been the starting-point of the human races when they set out upon their career toward our historical and modern periods. Mankind have traversed a long way to arrive at our present exaltation. It has often been dreary, thorny, abounding with terrible pitfalls and even bloody experiences. It is regarded as a not unbecoming jest to deride the connubial tie and the honor bestowed upon wives; but such little appreciate the cost at which that honor was purchased and the conjugal relation made holy in the estimation of the world. Indeed uncounted millions have yet failed to learn this lesson and to attain the moral sense accompanying it, which belongs only to a high civilization, as well as to purity of heart and instinct.

Would any wish the price of our civilization had not been paid and that its boon to our generation should be cancelled?

Would any like to exchange our culture and refinement for the condition of any of the peoples that have it not? A treasure bought at so dear a cost ought to be esteemed precious.

We may be cited to the narrative of Eden as illustrating primitive marriage. It may be well to scrutinize the story in order to learn whether it constitutes the beginning of our conjugal institution. It is recorded there that man was formed first, and inspired with life—not merely the power to exist, but the qualities of a living soul. It was perceived to be “not good” that he should be alone. Woman came into existence, and the commentary is made: “A man shall leave father and mother and cleave to his wife, and they twain shall be one flesh.” If this sentence has any specific meaning, it is a direct assertion of female supremacy. A man abandons and abjures all relations to his own kindred and merges his lot into that of his wife. The two are thus as one person, which the woman represents. When therefore, the serpent in the garden asked to know the obligations which had been established, he addressed her. This was not because she was the weaker and easier of approach, but because she was the superior. She observed the Tree of Knowledge, she plucked the

fruit, and, in company with her husband, ate it. The penalty inflicted upon her was degradation—subjection to the man. "He shall rule over thee."

The more primitive races of human kind regarded the mother as the head of the family. From her the children were named, and by her and her kindred they were reared and directed. Traditions of this primal order are found in different parts of Asia. Religion took its moulding from it, and the *Great Mother* became the object of worship everywhere. "MA," the first word learned by infants, was the very designation bestowed on the chief deity in Asia Minor; and the *Papa*, or *Atys*, was her *protege* and subordinate. The aboriginal tribes of America to this day reckon their families and clans by their women and never by male parents.

War seems to have changed the condition of society. As violence became general, the men associated as fraternities to resist it, or to subject others. Women, cumbered with the duties of maternity, were in poor attitude to fight. Their love bound them to their husbands, and these in turn became their lords. So long as war is a principal object of social compact, and the sword is the arbiter of dispute, the condition of woman will be subjection and vassalage. In useful labor, they are equals; in the capacity for endurance, superiors. When these qualities become highest esteemed in human civilization, women will become equal in the home.

Religion has in time sanctioned the present order. Itself the outbirth of human aspirations for spiritual life, it always takes the form given it by the people who possess it. In the language of the Prayer-Book, woman, when assuming the conjugal obligation, promises to love, honor and obey. Why? Because no longer does "man forsake father and mother." The woman now is the one required to "forget her own people and her father's house" to become as the daughter of her husband, of whom the Psalmist assures her, "he is thy lord." (Ps. xlv.)

The formula, the customs, and the requirements of marriage, have thus crystallized the whole history of the new departure, even what

we are now steadily outgrowing. Conjugal pledges of obedience are daily ceasing to constitute the law, and women freely demand equality, and refuse passive submission.

It seems to have been with reluctance that the legislation for female vassalage was accepted. The entire power of the priesthood was required to effect the result. In Rome and Greece, the nobles and patricians received their wives with religious rites. The fathers divorced their daughters at the family altar or hearth, and alienated them from the paternal household. They then gave them into the hands of the bridegrooms, who conducted them to their new abodes. Here, lifting them over the threshold, they were conducted to the hearth-stone and adopted or initiated into the family of their husbands. The same rights of life and death, of personal service, were now the husbands', as they had before been the fathers'. Such were nuptials and marriage sacraments. Their violation was sacrilege.

But all were not so married. No priest entered the house of a plebeian. His children had only permitted rights. They seem to have adhered to the older customs. By law a woman, like any other chattel or moveable, became the absolute property of her husband by virtue of a year's undisturbed use and possession. Women, by remaining away three nights in the year, prevented this merging, and retained personal freedom. It was done in Rome by observing the feast of the Mother, or Bona Dea. No man under the penalty of sacrilege might intrude there. In Greece, the Thesmophoria, the boon reserved for her daughters by Demeter or Ceres the Lawgiver, afforded them the requisite liberty. The Egyptian women also had a like observance; and if we read the Bible aright, the Israelitish women also had their practice of assembling by themselves in multitudes, for the fast. The sons of Eli are said to have taken advantage of this, and were accordingly deposed from the priestly supremacy.

In these usages the sanctity of the Mother had its inception. In the quarrels between clans and tribes, the women had husbands in one party and brothers in the other; and so were sacred alike on both

sides. They escaped destruction from massacre, and were often enabled, as in the case of the Sabine woman, to mediate for peace. Religion carried the matter still further. The Germans held that women possessed a divine spirit, and so made them the favorite oracles and interpreters of the will of the gods. Unlucky was this distinction in modern times, when the pagan worship was denounced as commerce with the infernal powers; and its ministers denominated "witches." The broom of Thor became their curse as it had been their badge. When the mother of a clan lived no longer, her spirit was believed to watch over her posterity, and she was worshipped as the Lady of her People. In this capacity, doubtless, Demeter as Goddess-Mother, provided for her daughters by the Thesmophorian law and festival. Whatever its nature, it preserved what of freedom the women of Greece enjoyed.

It may be well for those who decry our culture as almost wholly artificial, to bear in mind that it has established conditions of vital importance to human welfare. The average length of life has more than doubled. The earth supports a larger population. Famine is of less frequent occurrence and pestilence less deadly. Women have been rescued from social vassalage. From being the chief menials of the household, the prizes of adventurers, purchases for harems, they become the companions of their husbands, queens of the drawing-room and social circle, esteemed, honored and treated in every way according to the position they sustain. Instead of a servile and degraded condition, they have attained the honor and dignity of wifehood. Once maternity constituted their chief claim to respect, but now it is the fact, the rank, the distinction of wife.

It is one of the glories of our English tongue that its vocabulary furnishes words to express this great human advancement. Few other languages enable this. In most dialects womanhood has no distinctive appellation to express social condition. It only denotes an adult of the female sex. But the English-speaking people made their words mean discrimination; so that the *wife* should be recognized in her queenly rank in every household. Nor did they stop

with that. They likewise ordained that every such household should be made a *home*. Philologists may show that these distinctions are not sanctioned by laws of derivation; but the nobler sense of men has triumphed, first creating a relation between woman and man which did not elsewhere exist, and fixing the meaning of words to express it. Whatever Latin, German or Sanskrit may import, the English language and our institutions recognize the home as the abode of a nuptial pair, at once a dwelling and a shrine; the wife as the princess-regent, the priestess, and the revered one; the man as the *husband*, the *band* of the household, holding together the sacred fascicle of home-sanctities and domestic relations.

The intrinsic sanctity thus hallows the relationship, and makes it sacred and enduring. Its permanency is founded in its purity, its unselfishness, its influence to perfect men and women as divine, rather than as mere human beings. Willingly may we concede to the dreary past of human experience all the honor it merits for this sequel to its career. However vile and unworthy the incentive which first led men and women to seek each others' society, it has in the long tragedy of ages brought a higher ideal into their contemplation, and produced a social relation where every aim of each is addressed to enhancing and maturing the happiness of the consort. Rendering to the ancient institution all that belongs to it, we propose also to "render to God the things that are God's." It is not enough for us in the present stage of human evolution, that "twain shall be one flesh." The higher ideal is to be "one spirit," one mind, one thought, one will. Toward this point every romantic lover eagerly looks; and it is the focus of aspiration with every properly-associated man and woman. In such a relation the responsibilities of marriage are forgotten in its sanctities. We are transported to the highest motive of human action, LOVE—the regarding of another's welfare rather than one's own. It is the function of love to develop freedom; and marriage to be true, genuine and divine, must be the evolution of the purest love and the most perfect freedom. That this is the concept which be-

longs to the relation is evinced by the comparisons, so often made, that the Maker of the Universe is the husband of his creation.

In the relations of life, the task is set us to contemplate the highest ideal, reconcile with it as we best are able, our every day experience. The higher our moral culture and development, the more certain this is to be done; and yet the association of man and woman is the first, perhaps the chief means of such culture. We must take the matter as we find it and endeavor with all our will to render it what it should be.

“Every promise of the soul,” says Emerson, “has innumerable fulfilments; each of its joys ripens into a new want. Nature, uncontainable, flowing, forelooking, in the first sentiment of kindness, anticipates already a benevolence which shall lose all particular regards in its general light. The introduction to this felicity is in a private and tender relation of one to one, which is the enchantment of human life; which, like a certain divine rage and enthusiasm, seizes on a man at one period, and works a revolution in his mind and body; unites him to his race, pledges him to the domestic and civic relations, carries him into new sympathy with nature, enhances the power of the senses, opens the imagination, adds to his character heroic and sacred attributes, establishes marriage, and gives permanence to human society.”

The life of the celibate falls short of this ideal. It is opposed to the design of nature, that has implanted passion in every one as strong, almost, as life itself. Social conditions, philosophic or religious enthusiasm, may bar against forming connubial relations; but it is always attended by the vivid sense of incompleteness and disappointed aims of life, even if no vigilant Nemesis appears to chastise the unfortunate. Yet better is celibacy, better all the poverty of soul so often accompanying it, better even the physical suffering that it may occasion, than false, loveless, unhappy marriage. It may have been once different, when mankind were savage and uncultured, with little spiritual aspiration or development. The same laws and considerations would then control which govern the

whole world of animals. It is of little account to attempt to elevate individuals above the general level of their spiritual condition. But human nature and human thoughts are slowly ascending to a higher altitude. Though men and women are not quite angels, but retain every characteristic and incentive which has ever imbruted our species, there has come into form and activity a sentiment of love, a spiritual conception, which transcends, while also it blends with and elevates the physical impulse and instinct. We, therefore, may aspire not to abolish social relations between the sexes, but to raise them higher toward divinity. We will honor and esteem them for what they have accomplished, rather than scorn their short-comings. If men and women had been what they were designed in the creative idea, these would not have been. But the ideal of conjugal life has been exalted till it has become capable of adding a hundred-fold to human happiness. It is looked to by the youth and the maid as never in former times; not as the mere cementing of family alliances, but as affording to the individuals themselves the fruition of their dearest hopes.

Our libraries are full of the literature of this human love. Only select ones peruse books on science, and a very few read treatises on philosophy. But the novel, gushing and overflowing with passion, is eagerly sought. The manifestation of affection between a man and woman attracts quick attention, and thenceforth we are conscious that they and we are no more strangers to each other. We have witnessed that "touch of nature that makes the world of kin." It may be, it too sadly is true, that such is the sentiment as it appears in hope rather than in history. There has been a disappointment in experience; the actual too generally fails to fulfil the ideal. "Grief clings to names and persons, and the partial interests of to-day and yesterday."

With all this, love is, nevertheless, the ladder of the soul. It stands on the earth, and its base is imbedded in the soil. But its top is in the heavens, and the angels of God are ascending and descending upon it. It fills the heart with revolt against common prudential

considerations. The education of young women that marriage is only the thrift of a housewife and that woman's life has no other aim, is withering to the hope and affection of human nature. Time, to be sure, solves passion, and the offices of life to which men and women are severally appointed, require each to live much apart from the society of the other. Instead of living in each other's society, they must learn to live in each other's interior life. The charms of person, once so captivating and engrossing, pass away like the blossom of the spring, leaving the man and woman to be allied by the intellect and heart. This is the real marriage which the former only typified and foreshadowed.

Marriage now becomes a study. To be a husband or a wife is a world more than the priestly benediction has foreshadowed. It is the business of a lifetime as the prelude to an eternal existence. Its rewards are in the delights and perfections which are incident to maturity; the penalties are the griefs and discontents that attach themselves for indefinite periods to the spirit, and will not disappear at command.

There cannot be too much or too careful consideration of the matter. The motives should be scrutinized with the strictest conscientiousness. The legal view is, however, too gross and repulsive to a mind that has been duly refined. The first obligation of the husband is to his wife and of the wife to her husband. The basis of the obligation is not the nuptial contract itself, but conjugal love which that contract should be intended in good faith to express. The sexual impulse which nature has implanted in every healthy and perfect human being, is not sufficient of itself to consecrate a connubial alliance. Its office is to suggest such a union, but not to lead the way. The possession of reason, social affections, and spiritual aspirations, is evidence that they are to direct in every arrangement which involves the well-being of a life. Love is not passion, but a principle of being, not merely essential to the happiness of life but to the actual life itself. It is the great departure from selfishness and all those ideas and considerations that revolve round the selfhood as their

common centre. It is the union of one life to another by that law of polarity which attaches indissolubly the most distinct and opposite natures. There is no lowering of the tone, the character, the humanity, but their exaltation to a higher moral and spiritual plane. There is no real surrender or curtailing of freedom, but a directing of it in its legitimate channel.

Much has been written ably and eloquently of the duty of conjugal partners to each other. We should not bate a straw in regard to the love, the amenities, the mutual kind offices incident and necessary to the relation. But the propriety of much of the counsel that is given implies more or less that a marriage of convenience exists, rather than a real conjugal alliance. It is more than possible, we regret to acknowledge, that this is true. The earlier marriages which many encourage are more or less the unions of boys and girls, liable as they mature to grow apart and to drop off whatever of mutual affection they have ever had. Besides a pernicious education has been disseminated, by which marriage is made a woman's profession rather than a condition of interior election and choice. It is not regarded as very essential that she loves, or even prefers the man she marries; but rather that like the merchant having wares to dispose of, seeks in every market for his most eligible opportunity, her success is to achieve a bargain; she fails, if she does not; she will succeed in proportion to the brilliancy of the match; but an indifferent partner is better than none. Once married, the world is lived with as best may be done. Self-indulgence comes in first of all. The fortune of the husband is regarded as in a feeble degree his own; his wife has superior claim to possess and squander it. The principal bankruptcies, the most atrocious delinquencies that have disgraced American history, are due to this besetting sin of American wives. Having no intrinsic moral character, having sold themselves for husbands, they set foot like courtesans on the fortunes of the men, and scruple little at the latter's inculpation in crime, if it only obtains money for them to squander.

Too generally, in modern civilization, marriage is thus contracted,

and exists without sanctities. Homes in such circles are obsolete. Men are coarse in taste, self-indulgent and faulty, but all these defects of character are confirmed by women denominated wives, who are interiorly false to the ideal of the name.

In all such spurious alliances, there is no place for children. Naturally enough, legitimately almost, they are not desired. Fortunately often, the unphysiological life incident to fashionable society early unwomans the married, and incapacitates them for the producing of offspring. When this end is not effected, the skill of the family physician does the desired work. We say little of the professional persons whose unhallowed vocation is a feature of our peculiar civilization. They are the lesser culprits, and like blotches serve to reveal a deeper taint. In such marriage alliances as these, it is not an indisputable question, whether their unfruitfulness is not fortunate rather than an evil. The laws of nature arrest the perpetration of hybrid races, either by utterly destroying the power of fecundity, or the early extinction of the progeny. The children of drunkards and libertines are often extinct after the third or fourth generation. The immixture of wholesomer blood sometimes arrests this total destruction; but often with a taint perpetuated, as in the case of the myriads of scrofulous families in Europe from the syphilitic ancestry of the fifteenth century. The Black Death, itself the product of unconjugal living, has done rare service in weeding out these slips of noxious growth. It often seems, therefore, as if it would have been better that they had not existed.

We are willing to surrender the whole question of parentage to those who are charged with its duties, cares and responsibilities. The instinct is deeply and ineradicably implanted in our nature. The best-blooded, most perfect in heart and intellect, seem to possess it the strongest. Having their affections disciplined from self-seeking to generous love, they are best endowed and most disposed to rear offspring. The unloving are most willing to forego them.

When privation interferes to obstruct proper rearing, it is often

expedient to postpone or omit having them. Our civilization, the wants of our race, all protest against the production of an impoverished generation. An ill-born child owes no reverence to those who brought him into existence. This consciousness, transcending conviction, has already resulted in a very general subversion of courteous manners, and respect of the young for the older in families.

The fault, the error, may be and generally is in the false character of the nuptial tie; nevertheless custom and expediency generally agree that this falsity should not be amended, but rather, its consequences endured. It certainly operates to make the birth of children undesirable. Moralizing can go but little way to mend the matter. As the appetite for food is so inwrought into every fibre, cell and molecule of our bodies, that we will devour the most unwholesome substances and risk every peril, to satisfy it, so too, is the passion of sex. If partners, that will make better every incentive and desire cannot be procured, mankind unwilling to forego and often conscious of exquisite misery from forced abstention, will encounter every risk, moral and mortal, because nature has implanted the disposition, strong as the life itself. But ill beginning is not the way to a good ending.

It is no requirement of nature or morality that every sexual union should be prolific. The object of the act is higher than that. Its foremost purpose is to render the individuals more loving, more affectionate, more disposed to contribute unselfishly to each other's happiness. However unlike all this the primary impulses may seem, the tendency if not checked is to this culmination. Animals have no moral character, or capability for spiritual growth, and hence their matings and pairings go little beyond the immediate impulse and the passion for possessing. But even then, few comparatively of the sexual unions are prolific. Many offspring engendered never come to the birth, but are aborted. Many that are born perish soon afterward. In the vegetable world, not one seed in a million ever vegetates. The residue are at hand for the purpose, if wanted, but the earth has no space for them. Sometimes animals have the

instinct to arrest their own overproduction. The bees annul the sexual function for their own race. So do the ants, the squirrels and others. It may be supposed to be equally lawful for human beings; only we plead for the action of an intelligent conscience, and not the exercise merely of a despicable selfishness.

But taking things as they are, it is certain that we cannot have them altogether as they should be. The ideal is for us to approach; but every-day facts must inevitably have the paramount control. We cannot counsel celibacy; prostitution is its certain accompaniment. The appetites natural to us are laws which will instigate to action. Whatever cases may exist exceptionally, are neither sufficiently normal nor numerous to warrant us in modifying this statement. Some have questioned even whether enforced monogamy did not occasion prostitution. It is wisdom to say: Let every man have his wife and every woman her husband. The first duty of every conjugal partner is to the companion. This does not warrant, however, any sacrifice of personal comfort or propriety to the other's wantonness. What is not lovingly desired, there is no moral obligation to bestow. It is every man's, every woman's duty, to preserve health, purity and integrity of body and character. No marriage obligation may contravene that. It is well for persons assuming the relation to bear these facts in mind at the outset. The institution is primarily designed to promote their happiness, and thereby their usefulness. It gives the opportunity to have offspring, under more favorable conditions; but does not justify them in so doing except their uses in this world are promoted and their happiness accordingly enhanced. It is more than unfortunate for parents to have children in disproportion to their ability to provide for them comfortably. Fathers and mothers, made wretched, sick and nervous from overwork and privation, and often hurried to death prematurely, cannot render a parent's office, and had no business to assume it.

Another moral evil in households is the fact that the introduction of children into the household weakens the love of the father and mother for each other. They have less regard for each other's com-

fort; and when it is considered it is viewed as a duty rather than a spontaneous evolution. The birth and rearing of children superimposes new duties upon the parents; but should not root out the old affections. Numerous are the men who are crowded from their seat at home by their children. Too numerous are the women who find the society of their children having charms superior to that of their husbands. Even the animals surpass this. They pair and make an abode together, they unite in caring for their offspring, and return to their old relations when these have matured. If the long childhood of the human race precludes this to a great degree, the conjugal bond should transcend the parental in vigor and enduringness.

Marriage should be more delightful, sweeter, purer, than courtship. It should witness, not a mere display of attractive graces put on to captivate, but the development of all the choicer qualities of personal character. A man who is not careful, attentive and respectful to his wife, and a woman that is not pleasant, kind and regardful to her husband, annihilate whatever of sanctity their relation may have possessed. Marriage cultivates and expresses more perfectly every courtesy of social life.

Hasty and thoughtless parentage is no better than hasty marriage. The better way is to leave the decision with the mother. She has the peril to life and health to encounter, the burden and suffering. Often she has disinclination at one time, which does not exist at another. Dr. Jackson has remarked very forcibly: "If she conceives when she is disinclined, or finds herself in a family-way when she does not want to be, the disaffection and moral disgust which will arise, and which she will carry all through the ante-natal condition of her child's existence, will stamp its character more deplorably than any birth-mark could its body. No woman can be unhappy during pregnancy without carrying over as constitutional qualities in her child's organization the causes of her unhappiness. There is not a case in ten thousand where this view does not turn out to be true. If a woman conceives a child at the time she is in less than ordinary affectionate relations to her husband, or to others; if

these relations continue for any length of time after the conception has taken place; her child will never love its father nor be a man of public spirit. * * * Child-begetting and bearing is not a play-spell. It is the organization of new life, and very grave considerations attach to it. Whenever a woman is to bear a child, her surroundings of exterior life, as well as her interiorly vital and worshipful relations should be made as nearly perfect as possible. Then she will give a moral, mental and spiritual organization to her offspring that will make his coming into the world a blessing."

Marriage is an educator. It therefore should not be ruptured for slight reasons. The mutual fondness that brings people together is often the result of a social longing, without any special evoking of interior principles. It is very liable to wear out, and a wearying of one another to result. If sexual wants were not so much considered, but social needs more carefully studied, there would be a better beginning. If after this, the purpose be formed to be and become, what each should be, the apparent mistake may be transformed into another of the numerous examples of building wiser than they knew. Let courtesy and an obliging disposition be assiduously cultivated; each, foregoing whatever of disappointment may have been experienced, resolve to render the kindest regard to the other. Let every one beginning conjugal life, hold back from such sensual indulgence and strive to complete their unfinished courtship. The real pleasure of the nuptial relation is found in the social and intellectual communion. Where these fail, the person is poor, for they fail to provoke the highest love of which human beings are capable, and perfect every thing that is lacking. The most exquisite enjoyment a married pair ever found is in the intercommunication of thoughts. In this there is always zest, never satiety, nor weariness, nor a feeling as if it was desirable never to have a repetition.

In the primitive conditions of human society, men and women associated as brute animals; each living for self and little regarding the other. The mothers had and owned the children. Yet from the little *altruism*, or regard for another, thus engendered, came a broader

feeling that others had rights which must be respected. The conjugal love was in time extended to an affection for kindred; then into a fraternity and tribe. All the while humanity was widening in the scope of affection, and with it came culture. Religion underwent a like evolution. When men died, it was believed that their spirits remained alive, and attended upon their children and kindred. It was usual to seek to propitiate them with offerings. In this way came the worship of ancestors, and the sacrifices of the dead. The same altruistic feeling that had learned to respect the rights of others was carried to the other world. The spirits of the dead became the over-lords of the living, their family-gods, their divinities. In time the father-god of the clan became the god of the people. The woman who entered the family as a wife, became the subject of its gods, and no more had protection from those of her own people and father's household. Then love to the neighbor became the idea of the world-religion, and one God the Father of all mankind. This is the last ideal of human excellence. It takes from none any of the instinct of self-preservation, but leaves the primitive nature intact. But it has taken the love of sex, expanded it to the love of kindred, veneration for spiritual beings, national patriotism, clear to universal benevolence, and the love and worship of one sole Divinity from whom every human spirit is an emanation.

Aristotle proclaimed the supremacy of the idea that social order is founded on love rather than on justice, and that Eternal Justice is love. This is the source of the grand sentiment of human brotherhood. Jesus taught little supernaturalism; but the doctrines imputed to him, that of a holy spirit which shall awaken in all an enthusiasm of humanity, by enabling man to perceive the simple but mighty truth that love is morally omnipotent. This divine spirit in mankind supplied no new principle, but was only the evolving of what was already present. Jesus taught that man is naturally capable of the sentiment, not only to produce a life of holiness subjectively, but also to overflow in a tender compassionateness towards others. In so far as Christianity is superior to other religions, it con-

sists in the fact that it founds its highest morality on this basis of love. It was not possible till the age in which it appeared; and then only from the discipline which men had undergone in the previous ages. The practice of benevolence which it enjoins, meets a response in every mind; the feeling from which it springs increasing in strength from generation to generation, till the observance of the active virtues are regarded as the duty of every man.

The author of *Ecce Homo* has summed up all the Christian idea in this one expression: "humanity changed from a restraint to a motive." That which is right, as soon as it is ascertained, is binding on the conscience. It must be discovered simply by reference to the experiences of humanity, and the laws that govern its moral development. The instincts innate in every one, as has been already asserted and shown, form the essential foundation of all morality. The chief concern with every individual is the perfect development of the powers and faculties of his own being; the primary motive to right action is duty to one's own being as man. So far virtue is passive and negative. The active virtues are based on duty to others as common members of the human brotherhood. Both, however, have their common basis in the nature of man as derived from a divine original; and therefore it must be traced to the Infinite or Universal Existence of which mankind forms part. The sanction for both the active and passive virtues is to be found in man's duty to himself as a child of God, and moral obligation may therefore be placed on the deeper basis of duty to God himself. The requirement is to live in strict accordance with the principles of man's nature; and as this is derived from God, his being may be said to supply the real test of moral conduct. Perfect harmony with God is only possible when perfect purity has been attained—when the Divine nature of a man has been perfectly developed so far as this is possible under the limiting conditions of the human organism. The human soul thus attains the highest degree of internal illumination of which it is capable, accompanied by the complete performance of all the moral obligations which the laws of its nature requires.

This is the culmination of the marriage idea; as the nuptial pair become more as one they develop more and more of the personal and altruistic virtues that indicate the divine nature and influence; the perfection of which is the highest degree of spiritual illumination, and a perpetual union with Divinity Itself.

MEDICAL PRACTICE.

AN

INTRODUCTORY CHAPTER.

"The knowledge which people possess of the art of healing is the measure of their refinement and civilization."

The human system is like a delicate complicated piece of beautiful machinery, calculated in a state of perfection to perform its varied operations with a precision and regularity not surpassed by any known mechanism. It is liable to become disarranged, obstructed in the actual performance of its functions; and then, instead of creating greater disturbance; instead of resorting to measures which would produce greater hindrances, which would retard or destroy any portion of the organism; how much better to use only those agents which would clear out whatever was in the way of its harmonious action, and leave it in its pristine condition unimpaired.

It is not philosophy, it is not science, it is not morality, it is not common sense, to use agents that aggravate an already diseased and irritated constitution, instead of those that relieve and quiet; nor to employ measures that endanger and destroy life, instead of those that conserve and save it.

When we review the statements made by the most eminent physicians that, in effect, the practice of medicine, as it has been practiced heretofore, is a curse instead of a blessing; that it has "destroyed more than famine, pestilence, or the sword;" that "eighty or ninety

per cent. of those who employ physicians are better off without them;" that their practice "fosters disease more than it cures it;" that it "debases and ruins the constitution;" when we see the evidences ourselves in the devastations produced, the wrecks of our fellow-beings around us, no one will for a moment question the imminent necessity that exists for the abandonment of such a base treatment of mankind, under the pretext of trying to benefit them and the substitution of a mode at once more rational, scientific and human.

PRACTITIONERS.

The different schools of medicine in their teachings upon the subjects of Anatomy, Physiology, Pathology, Chemistry, Obstetrics, Surgery and Materia Medica, substantially agree. They differ, to some extent, upon the theory of disease, but very widely upon the *practice* of medicine. The former is comparatively unimportant. The unprofessional soon learns that certain diseases are contagious in their character and shuns both the person and the place afflicted. Of the highest importance to mankind is the means to be employed in eradicating the disease. When a person is afflicted, it is too late to think of theory. His prayer is for relief and cure. We do not mean to undervalue the labor of scientists, for we heartily accord them their full measure of merit and praise, but the history of medicine is a continuous diatribe upon theories which are accredited to-day and to-morrow discredited, if not ridiculed. We believe from all this great truths have been sifted and culled out, and that steadily the profession is advancing. But man, well and properly born, should survive his allotted time of three-score and ten years. The machinery should then cease because it has worn out. Contemplating this fact, how startling are the mortality reports? Surely the percentage should be considerably lessened. We believe that the majority of practitioners of the present day are liberally minded and would not hesitate to adopt any means that would alleviate suffering, diminish disease, and prolong life. This is eclecticism in its true sense, and

"choose the best" does anything but circumscribe the field within the limits of one school of medicine. The difficulty lies in the fact that our colleges and professional brethren teach *school* and *sect* too much, and not to the proper extent, the SCIENCE OF MEDICINE. The Old School are wealthy in their knowledge and literature. They far outstrip all rivals in their contributions to the different departments above indicated. The most bigoted will admit, at least, the possibility of there being some truth in homœopathy, or he might be considerably perplexed to satisfactorily explain their extensive and attrahent practice among the wealthy and intelligent classes in all civilized countries. Another school which is gradually gaining strength in this country is known by the title Eclectic. Like the others, however, they are sectarian and have bounds beyond which their votaries shall not trespass. Who will not admit that they have done much to advance medical science, particularly in their favorite field, the discovery of the medicinal virtues of the indigenous plants of this country? There is scarcely a physician's shelf or drug-store in the United States that does not contain many of their remedies. Hydropathy has given the world many valuable facts respecting the treatment of disease, and has so far simplified practice as to bring its valuable methods within the reach of any intelligent household; but sectarianism rules here also, and, instead of seeking some medicine that may assuage pain, heal a wound, or cure a disease, they disbelieve wholly in the use of drugs and change treatment only in so far as to discover if some other and untried *use* of *wa'ter* will not exactly suit the purpose. We know of one case in which a lady patient was washed (externally and internally) to death.

ITS MYSTERIES.

Under the uncertain and fanciful theories which have been advanced to explain disease, is it any wonder that there should be mysteries, contradictions and absurdities in the practice of medicine? If mystery is connected with the nature of disease, mystery will also be associated with the practice of medicine. Quacks and

charlatans will flourish on this mystery. The people are ignorant, and therefore liable to be duped by every boastful pretender. The greater the bombast of the pretender, the more will he impose upon the credulous. If he have cunning and shrewdness, he is almost certain to amass wealth. Many honorable people knowing the cheat, come to the conclusion that the people love to be humbugged. Some, otherwise honorable physicians, seeing the success of quackery, and having a desire for the spoils, turn in and practice the same black arts. Others, truly honorable, utter their earnest protest, but it is of no avail. They ought not to complain. They are themselves mostly responsible for this state of things. The mystery thrown about disease and also the practice of medicine, by the medical fraternity, is the legitimate cause of this quackery. If disease be a mystery, then the practice of medicine is an enigma. The more profound this mystery, the more doubtful and perplexing is medical science. If our popular physicians were uniformly successful in practice, they might enjoy an enviable reputation. But the great uncertainty that attends their prescriptions has seriously impaired the confidence of the people in their skill, and in their distraction they fly to any source which promises the blessings they seek at the hands of medical men. If they obtain the blessing of health from men of humble pretensions, it would be strange if they did not ever after favor those from whom they received such timely aid. The practice of medicine must, then, be divested of its mysteries, if we expect harmony among its members, or honor to be awarded to this noble profession.

KNOWLEDGE NECESSARY.

Many of the grievous ills which mark our course through life must be ascribed to defective education, to deteriorating circumstances, and to want of determination on the part of parents to maintain a restrictive government over themselves and their children.

The starting point toward the alleviation of physical suffering, is

a close study of the laws which govern our organization, for if these laws are violated we cannot hope for a continuance of good health. Outraged nature's laws know nothing of the plea of extenuating circumstances. If a certain course detrimental to health be pursued, its effects cannot be obviated. A life of severe self-denial and rigid care may alone permit of a continuation of the existence imperiled by the follies of youth. In youth, the habits and the walk of life of the individual exert a decided influence upon the system, and often predispose it to disease, and its not infrequent consequence, an early death. The constitution becomes broken, and an after life of invalidism alone intervenes between this and the final change.

The extrinsic influences which bear upon health, and indirectly upon longevity, are in action incessantly. The awards of nature are sternly just, and the consequences, call them punishments if you will, are in strict proportion to the offense. Constantly and uninterruptedly are the forces in action around us, which will, in addition to one's own habits, determine the question of health or the absence of it, and with the latter, the ultimate question of survivorship. The constitution may not only be subjected to open and visible assaults, leaving distinct traces of themselves behind, indelible and never to be obliterated, but it may also be insidiously undermined.

A suppurating process may and too often does, go on until the foundations of health and strength have been utterly destroyed, and a sudden collapse is the first outward intimation of the fact. Nor does such a sapping go on without the consciousness of the individual, if he would but listen to the ominous warnings—but whether there be consciousness or unconsciousness, and whether the latter be simple or from voluntary effort, it matters not—the work is pressing steadily forward, as the result demonstrates. Even when life is approaching its close, health and life are not altogether removed from the action of the habits of the individual himself. It has been beautifully said that “the line of health has on each side a margin, within which it may vibrate according to disturb-

ing causes, without actual illness resulting. Without that margin is another permitting of still further oscillation, compatible with life but not with health; this is the limit of possible recovery. The oscillations may approach the outside of the margin, and yet the equilibrium be recovered; the nearer the margin is approached the greater the danger. Beyond that outer margin life is permissible for a little time longer, but the equilibrium is too rudely shaken ever to recover itself. The margin of each boundary is more easily reached after repeated and persistent assaults upon the health, and consequently lesser exciting causes of disease become serious. An oscillation arising from some disturbing cause which would, in health, scarcely extend beyond the first margin, will reach far into the second margin, if those limits have been previously reduced; and a disturbance which would scarcely have amounted to sickness, now reaches into serious illness. A ruder oscillation, which, in a healthy person, would not exceed the limits of possible recovery, in another extends beyond that margin and death quickly follows." Such is an explanation of the suddenness with which many apparently healthy persons succumb to what is regarded as scarcely serious disease.

This forcible illustration demonstrates pointedly the great importance of caring for the health all through life; not only for the enjoyment of health, the avoidance of the discomfort of illness, but also for the maintenance of the existence of the organism.

Whatever has a tendency to enfeeble or arrest the vital energies of the system, is injurious, whether it be cold, grief, want of proper nutriment, over-anxiety, excitement, excessive labor, or long continued activity of the brain in literary pursuits; everything that draws on the nerve force beyond its legitimate and proper requirement, is a direct and positive source of evil, and sooner or later brings with it pains and penalties.

In order to obviate the influences of hereditary physical infirmities, careful hygienic training must be commenced in the earliest periods of childhood. Careful culture will do much to modify, as irregularity will assuredly aggravate the consequences of a faulty organization.

In early youth is laid the physical and moral foundation for the habits of after life.

The physical and moral powers hold the same relations in life that the main-spring and balance-wheel hold in the motive power of the watch; one gives the stimulus of action, while the other gives character and correctness to the motion and its indications, and from their mutual dependence the slightest variation of the one imparts a portion of the derangement to the other, and in accordance with the intentions and ability of the maker is the perfection of his work. In childhood and early youth the powers of observation are keenly alive and retentive, and all words and acts are garnered for the direction of future life. Indeed, such knowledge is the polar star of existence, the guide of sorrow and happiness, whose refulgence is in a measure optional with those to whom the early training is intrusted.

If parents could but lift the veil which shrouds the future and see the misery they are entailing not alone upon themselves, but also upon those who derive their being from them, by their violation of nature's laws, their sinful habits and vicious indulgences; if they could but foresee the sorrows, the suffering and misery which they are gathering for their declining years; how few would persist therein!

A man may have the right to do many acts that produce but temporary injury, but he has no right to permanently impair his health, shorten his life, and especially to transmit enfeebled constitutions to his children. As he has no right to do this, it is his manifest duty to study the laws of health for himself; and, so far as it is in our power let us see that the rising generation is properly instructed. It is not valid reasoning to say that these matters pertain exclusively to the practice of medicine, and should not be meddled with by the people. A man's life is his own, his health is his own, and in the preservation of both he has more interest than any other person.

THE PHYSICIAN'S ATTAINMENTS.

While I advocate the diffusion of knowledge among all classes, I do not wish to be understood as recommending that each person

should be his own doctor, because to obtain the highest degree of skill in any art, it is necessary that it should be studied with great care, and that the entire time be devoted to it. Hence, in the practice of medicine, the most intricate of all arts, it becomes necessary that those who pursue it should have a thorough medical training in order to become skillful workers. Not only does it require reading, but, as in all other arts, it requires that experimental knowledge which is only obtained in well-conducted colleges and hospitals. Not only is it necessary that the physician should have spent years in the study of his profession, but he must also have a love for it in order to prove successful.

THE DOCTOR'S STATUS.

The vocation of the physician is the spirit of true Christianity in action. It consists not alone in healing the sick, in soothing the afflicted and recalling the wandering intellect, but also in cherishing a love of peace and veneration amongst all men, and in promoting moral and intellectual improvement. The practice of the healing art is an occupation intrinsically dignified. It cannot be divested of this quality by the humble condition of the practitioner or by the repulsive nature of many of his duties; still less by the lowly condition of his patient. In the most abject human being the true physician recognizes a fellow-man; in the most exalted, nothing more. The offspring of the highest and the lowest, in the first moments of their existence, come under his care, alike naked and helpless. The screen which in after life conceals many of their weaknesses and some of their virtues, ever open, more or less, to the medical observer, is for him removed by sickness and by misfortune. Before the man of healing, the trappings of greatness are laid aside, and the cloak of deformity is dropped. Beauty puts off her ornaments and without a blush modesty raises her vail. And when at last, man is about to take his plunge into the abyss of eternity, he strips off all disguise and stands revealed in his primitive nakedness and helplessness. Surely those who hold such relations to society should be learned, discreet and wise; trained by

liberal studies and by illustrious examples, to be ever true to the cause of humanity ; elevated by education, as by education alone they can be educated, to rise above all that is sensual and sordid. ,

THE MODEL DOCTOR.

It is generally conceded that poets are "born, not made." We have with much reluctance come to the same opinion respecting physicians. It is noticeable that the most prominent and noted show a genius in their adaptability to the profession and its labors not remarked in acquired talent. Whether in office consultation, in counsel with his professional brethren, or at the bed-side of the sick, such an one is pre-eminent and usually impresses the observer with the fact. He is a gentleman in every respect, possessing "*suaviter in modo, fortiter in re,*" gentleness in manner, courage in emergencies. Exceptionally we find a rough diamond of value, but while this personal magnetism may affect some advantageously, to others it may be, and often is, detrimental. He also knows that nervousness, idiosyncracies and the like, have a physical cause which he seeks and endeavors to remove. He is learned in his art and has a fund of resources always available. The absence of his medicine chest or the want of a particular remedy does not disconcert him; from the meagre material at hand his skill will supply all necessities. The true physician is always in earnest. He does not allow a case to become grave or hazardous before he displays proper interest. He knows that the patient has a right to expect immediate improvement and laboring for that end, usually effects his purpose. He is as much interested in a sudden cold as a typhus fever, as much in a fever as in a cancer, as much in a cramp as in a cerebro spinal meningitis. With the daily weary round among the sick, it is no wonder that some become callous; still, knowing the possibility of such a condition, a studied effort should be made to avoid it.

"The true medical man will tell you what is wrong. He will do so in simple language, perfectly intelligible to the ordinary man. If he talks gibberish for the purpose of bamboozling you, he is worth-

less and you can get no good from him. But if he is a true man he will tell you what is wrong as no one, not trained as he has been, will possibly be able to tell you. He may be mistaken, no doubt, but he will not usually be so. And it is surely a thing of great use to learn what is wrong, even if you cannot be told how to remedy it." We are pleased with his uprightness and candor; he cannot cure every disease that comes under his observation, and is frank enough to dispossess your mind of any such impression. When sick in bed, he has many things to tell you about diet, air, sunlight, bathing, but little medicine to give. The expert healer knows that the simple swallowing of medicine is of but little avail, and in his attempts to help nature he is exceedingly cautious not to retard the healing processes.

If the instructions are many in an acute disease, they should be much more numerous in a chronic affection. A single prescription must partake of the miraculous (and we have yet to see anything supernatural in the art) that would remove the morbid condition of years' standing.

He will patiently listen to your suggestions and if any have merit, he will approve of them, and if they are the means of your recovering he will glory in their results as much as yourself. He will administer only remedies that are pleasant to the taste. The advancement of chemistry and pharmacy has of late years been so rapid and they have reached such a degree of perfection, that any disagreeable medicine can be completely disguised.

Our model does not hesitate to give instructions and advice in the practical application of hygiene. In doing so it is apparent he works against his own interests as a business man. The principles of hygiene have in view the prevention of disease. Diseases are preventible, with the exception of a very few,—notably accidents and old age. The laws of Nature are immutable and ignorance affords no excuse or palliation, hence no fears need be entertained that the physician will "go begging."

If you have such a physician in your midst, as we have indicated,

hold fast to him, for, as Solomon says of knowledge, he "is thy life." When his services have been required, cheerfully and promptly give him abundant remuneration. No monetary scale can fix the value of having such an one as a neighbor. Gratitude should not be circumscribed by the time you are lying helpless on your back. The amount of time consumed or quantity of drugs furnished is no standard of judgment in such matters. Remember he is not a day laborer nor a druggist but a *Doctor*, literally a teacher. One step further might be hinted and that is, add to his office or parlor some article useful or ornamental that will be *your own* souvenir.

NATURE THE SOURCE OF REMEDIAL POWER.

As in surgery, so in medicine, the powers of nature must perform the healing, and the offices of the physician are but to assist this process. There are cases in which it can be done directly; for instance, the use of an emetic to remove from the stomach its fermenting and irritating contents. The extraction of a splinter from the flesh is of this nature. His services are of much more value however, in the indirect methods he can and does employ; giving the invalid sunlight, even temperature, an abundance of fresh air without draft, scrupulously clean clothing and bed-linen, and—still more important—a clean skin. Cathartics are good in their way but are undoubtedly used too freely. The skin is emphatically the best outlet we have for impurities in the blood, and it is in this fluid that disease germinates. Even the kidneys and liver, other great purifying organs, do better if the skin has been freely purged by the use of the Turkish or alcohol vapor bath. Such purification, combined with proper diet, assists nature both in restoring the blood to its natural condition, and also in furnishing those elements only, which will maintain it at its proper standard. The continued use of such means may be successful in eradicating hereditary taint. Persons so afflicted should endeavor in every way, and that continually—to enhance their vitality, to increase their vital energies—so as not only to prolong their own lives but those of the coming generation.

The healthy germs of the future life can only be formed by pure blood, and this in turn is dependent upon the normal activity of all the organs of the body, and the diet, which is its chemical basis.

We are as much subject to nature's laws as material things, and nature's laws are immutable. The violation is invariably and inevitably followed by disturbing consequences. No age, no condition, no position in life secures emancipation; it is therefore reasonable to expect that the better we become acquainted with the laws of our existence the less we will violate them, and not only escape punishment and enjoy better health, but attain that strength of mind and body which is a safe-guard against contagion and epidemic.

Medicines, to be effective, should help nature, which in every case tends of itself toward recovery; or, conversely, they should be such as will not make a well man sick. Pure air, sunlight, nourishing food and those remedies, if any, that will encourage the functional activity of the eliminating and secreting organs, are of this character.

MEDICINE IN SMALLER DOSES.

Mistaken fanaticism has spoken of the "vile, polluted body," and has assigned to Providence what men owe to their errors alone. No ordinarily educated person can be imposed upon by quack medicines which cure all diseases. The homœopathic heresy has at length diminished our nauseous draughts; blood-letting at stated intervals is one of the absurdities of our grandfathers at which all enlightened people laugh. Even physicians and apothecaries have begun to diminish doses and to prescribe less medicine and fresh air, less treatment and more exercise, less cures and more preventives of the causes of disease. Marvelous changes have been made and many improvements may be noted since Moliere sneered at doctors and their tricks; but much yet remains to be done to make people generally understand the laws of health and avoid the many maladies which ignorance inevitably entails.

PROFESSIONAL ERRORS.

Gen. George Washington was taken with croup, which an appli-

cation of cloths dipped in cold water would probably have cured in a few days, but he was bled again and again, and so died. President Harrison, notwithstanding his age and infirmity, was cupped, leeches and medicated with the usual result. The Duke of Kent, the father of Queen Victoria, is said to have died of remittent fever. The truth is, he was bled to-death by the abstraction of one hundred and twenty ounces of blood. And one of the most eminent physicians of the day said that if he had been called sooner, he should have bled him more freely. Prince Albert died in the flower of his manhood, of typhoid fever. There is little doubt that he might have been living now had he been properly treated.

BOARDS OF HEALTH.

When it is possible to separate politics and its consequent incompetency from the appointing power which shall give to us boards of health, a public demand will be made for such authorities. There is at the present time and ever will be, an abundance of labor for men of worth, of liberal education, and practical medical knowledge. The facility of modern travel, whether by railroad or steam vessel, is such that the invalid can journey many miles with a comfort almost equal to that of home; just stricken with an infectious disease or just recovering from such an attack, it is possible to spread a contagion over great distances, through a score of towns or villages, and in houses that may be counted by the hundred. Instances have happened in which ladies, broken out with the small-pox, have traveled many miles, escaping detection by being closely veiled; "others who have had this disease in a mild form, appear at will on the highways, every moment their bodies throwing off a little cloud of infecting dust." At present, restriction can only be placed upon the inmates of an infected house, but hundreds may leave a neighborhood, passing through an epidemic, and mix with the travelling public.

Possibly physicians are culpable for neglect in cautioning the families they visit against the too early appearance of children just recovering from scarlet-fever, measles, small-pox and the like, upon the

streets, in the school-room, or among their playmates. Scales which are thrown upon the air are fructified germs, and if they find proper soil, will invariably produce their blossom and fruit. Intelligent heads of families and educated nurses seldom take the caution which they know to be necessary in such matters until harm has been done. Knowing that in typhoid fever and in cholera the excretions of the bowel are poisonous, they hurry them away from the room and the building and deposit them in privies or upon the ground to be wafted upon the winds to the nostrils of the passer-by, or to be carried to the rooms of houses in the neighborhood. How simple in such cases to have them deposited in vessels containing a disinfecting fluid or, if this is not possible, to receive the discharges in cloths, and immediately immerse them in tubs or pails partly filled with the solution.

EPIDEMICS.

Fortunately great epidemics do not always increase the average mortality. This fact is instanced in the case of cholera, and again in that of small-pox in London. Those who die in such cases would have died of other diseases. No epidemic attacks everybody. They have cholera or measles or small-pox who are in a condition to take such diseases. Four-fifths of those who die of epidemics are already in a diseased condition, so that what seems to be fatal sometimes does not increase the rate of mortality. The best safeguard against disease is to be well—to habitually observe the laws of health. Health resists all causes of disease and is the most substantial safeguard when one particular kind of disease, especially of a contagious character, is counting its victims by hundreds. Really healthy people do not have epidemics, those who are strong enough to resist do not die of them. Those who have the conditions and treatment that all ought to have, recover in a great majority of cases.

CONTAGION.

This subject should receive more attention than it does. Persons moving from one house to another should not be satisfied with the

fact that their new location is comfortable and convenient, and that its hygienic arrangements are proper, but inquiry should be made as to the cause of removal of the late tenants. If this has been from disease and the disease was infectious, the premises should be shunned until thoroughly disinfected and ventilated.

MORTALITY CAUSES.

In cities, where greatest mortality exists, we find crowding, filth, imperfect drainage, stagnant air, poor ventilation, bad or deficient water supply, adulteration of food, the refuse of the markets, drunkenness, vice, crime and every form of human wretchedness.

HYGIENE.

It may be taken for granted that sanitary science has established two things : *First*, That when drinking water is contaminated by sewage, those who drink the water are in danger of suffering from typhoid fever, diphtheria and other febrile ailments, classed together under the term 'Zymotic.' *Secondly*, that when gas from sewers or from leaking drains makes its way into a house, the inmates are in imminent danger of an outbreak of such zymotic diseases, not to speak of minor illnesses, the connection of which with sewer gas is more than suspected.

CLOSE CONFINEMENT OF THE SICK.

Dr. P. Niemeyer writes:—"It is a peculiarity of consumption that it may appear in association with all diseases in which recovery is slow. In the first place, it accompanies inflammation of the lungs, unless the patient, while recovering, is permitted to breathe plenty of pure air. But it also makes its appearance in typhus, diabetes, and meningitis, when the patient is kept for a long time in a close room. So, too, delicate persons—those supposed to tend toward consumption—will all the sooner become indeed 'tuberculous,' the more they are coddled, protected against cold, and treated with warm drinks and so-called 'invigorants.'"

SICKNESS IN THE FARM-HOUSE.

In an essay upon Occupation which appeared in the "Sanitarian," Dr. Bartlett of Conn. paints the picture in its true color. He remarks: "The causes of disease then, which fall to our consideration as due to occupation, are those pertaining to farm life, as relates to the male portion of the community, and to domestic or indoor life, as relates to the female sex. The question then, at once arises, is farming healthful? It would seem to be the height of folly to attempt to disprove, or even criticise this almost universally accepted belief. Let it be granted that the principle is true, yet there remain certain aspects of it through which the lover of honest criticism can easily penetrate. Farm life possesses three beneficial elements: (a) constant physical development, (b) abundance of pure air, (c) absence of excess and simplicity of life. Against this must be set three elements of danger: (a) constant physical and mental strain, (b) irregularity of life, (c) exposure to the inclemency of the weather. That it is possible for the farmer to so conduct his affairs as in a great measure to reap these benefits, and not expose himself to the dangers, cannot be denied; but practically he does not often do so. A sketch of a farmer's life will make this apparent. A young farmer sets out in life, ambitious of a competency. He rises early, and goes at once to his toil. After a hasty breakfast, the regular labor of the day is begun, and continued until noon, when he gives himself a short dinner hour, then resumes his labor and continues it through the day, till, worn and weary, he seeks his home at night. Completely exhausted, too tired for recreation, he is obliged to spend his evening in quiet to recuperate himself for his next day's work. Often he rises in the night-time and takes a long journey to the neighboring market, exposing himself to the chilly night air, and careless as to his clothing; and if he returns before the day is done, takes up some unfinished task and continues his labors again till night, devoting but scant time to rest and food. This course of life is continued day after day, and year by year. In the meantime he is economical, and laying up a competency; but is steadily break-

ing down his physical health, as his weary constitution and stiff joints so often testify.

This surely is a picture of excess, and one in which the good elements of farm life are sadly perverted and misused. It is not only a physical wear and tear, but what is more, the mind often becomes broken or enfeebled in its operation. The records of the Connecticut Hospital for the Insane, for instance, show this with startling emphasis. An inspection of them shows that of the whole number of males admitted from the beginning, of the various occupations 170 are farmers, the total number being 778. We now pass to speak of farmers' wives. The same records show that, of the whole number of females admitted from the beginning, which is 558, 215 are housewives, and, of course, for the most part the wives of farmers. When one considers the method of life of this class of persons, it does not seem so surprising. Take for an illustration a young farmer's wife, the companion of him who has served as our previous example. She may not be very strong physically at the outset; but be that as it may, she enters into all the plans of her husband with alacrity, she assumes the entire control of the house and does her own work; this is well enough at the outset; but soon she enters upon the maternal state, and a young and increasing family becomes a part of her care, and draws upon her in a two-fold way; she bears not only the physical strain of child-bearing, but also continues to perform her own household duties; her husband's business still increasing, adding more yet to her already multiplied duties; but still she presses on, and so continues, till her pale, anxious face and weary step tell of a constitution broken at once mentally and physically. This is no imaginary picture, but one enacted continually among our farming people to-day. The average farmer's wife is one of the most patient and over-worked women of the time. One has only to attend one of our village churches some Sunday in the summer to obtain a critical view of our over-taxed farmers and their wives; a glance over such an assembly reveals a set of faces whose very lineaments are drawn and wrinkled from

overwork ; they tell of lives of constant, unremitted toil, the signs of which even a Sabbath day's rest cannot at all efface. It may not be necessary to speak of the occupation of the children, yet there are one or two points not to be overlooked. It has passed into a truism, that farm life is the right kind of life for a pale sickly boy, but true as this may be in a general sense, there are yet many exceptions which should not be overlooked. Take, for instance, the younger child of this pair above described. He is, perhaps, a weak, frail child, and when he reaches the age of six or eight years, he begins to labor on the farm, doing such light work as he is supposed to be able to bear. As he grows older his tasks increase, at the same time he is pursuing his course of study at the district school ; but gradually he acquires the same habits as his father, and his growing body is subjected to a strain which it is ill able to bear, and he grows up weak in body and in mind, an old man at twenty, or it may be he dies of phthisis engaged in the very occupation which popular opinion calls the most healthful. It would not have been so in his case had his life been properly guarded, and he would have developed into healthy manhood, had his labors been properly adjusted to his strength and his life been conducted upon hygienic principles. Parents, in choosing a course of life for their children, should consider whether the child can bear the strain of farm life, and whether it coincides with his mental organization, and should so shape his course that he shall leave the farm at a proper age for some other occupation if his constitution so demands, and then the sickly young boy often develops in strength and bodily health. The cry so often uttered, "keep the boys on the farm," is a senseless one, indiscriminately applied, and crude in its working ; for the boy who is not adapted to that occupation should not be subjected to it any more than the thin-skinned, delicate-limbed horse should be harnessed down to the plow."

NERVOUS DISEASES.

In this high-pressure age, rest is one of our greatest necessities. It

is a curious fact that a blunt razor, if put aside for a while, will come right of itself; in the same way, if we give repose to the brain, stomach, muscles, etc., they will soon recover their "edge" again.

The social causes are "bad and insufficient food, bad air, unwholesome habitations, injurious occupations or want of occupation and education, and intemperance, chiefly though not wholly, alcoholic." There is a large amount of secret drinking not only among men, but among women. In some circles the opinion prevails that the limits of alcoholic traffic have been reached in this country and that the increasing restrictive legislation and the popularity of "blue ribbon" and other temperance organizations, indicate as much. Observations in different places and among many families and individuals disclose other and more injurious substances to be substituted. These are opium, morphine, chloroform and chloral; and to intensify their action an hundred-fold some resort to sub-cutaneous injection. Above all, these should not be taken or used by the nervous, hysterical or hypochondriacal; nor would any intelligent physician administer them to such temperaments. Here many nervous systems are wrecked.

ENNUI.

"Ennui" is enumerated by Dr Noviet among things eminently destructive of life. We have scarcely its equivalent in the English language; but it is idleness in youth, surfeit in the adult, weariness and despair in old age. Whatever induces moral depression is as baneful to existence as that which induces physical depression. Firmness of will is, therefore, one of the most powerful sanitary means. The seven cardinal virtues were faith, hope, charity, temperance, justice, patience and *force*. The seven mortal sins, pride, avarice, idleness, luxury, envy, anger and gluttony. The first are favorable to long life, and the others fatal to it. The force of the will, by giving a high tone to the more noble faculties of the soul, strengthens the principles of life, and enables both mind and body to resist all that is pernicious and hurtful to it. Fear or indecision, on the other

hand delivers it up, helpless to the enemy. Energy in doing good is still more sustaining than even strength of will devoted to mere selfish ends. It is this feeling which enables a medical man to perform his duties with cheerfulness and impunity in time of pestilence and plague. Fabrizio, afflicted by a fatal complaint, withdrew to the country to die. A family of peasants supplicated his aid in the case of a disastrous accident, and their gratitude was so lively and sincere for the cure effected, that the physician felt that if his life was not utterly useless he had no right to abstract it from that of others. He resumed his labors, recovered his health, and lived to a good old age. Barthez, Fodere and Hufeland all believed that great power of will could induce prolongation of life. It is certainly powerful to relieve. Kant used to say that most nervous disorders are due to idleness and mental inertia. Many conditions of debility, discomfort, distress and sickness arise, indeed, from fretful and cowardly giving way to corporeal sensations. The great French Revolution roused many poor, sickly and languishing persons to health and activity.—(Harpers' Weekly.)

There is but one royal road to success—WORK. Grant in arms, Stewart in commerce, Webster in oratory, and Field in telegraphing, tell us one story—work. Fortunes do not float to us on a smooth sea. Culture of heart and brain does not fall upon us like the light of the morning. The price of all excellence is toil.

More than anything else the world wants is workers. Nature is waiting for them. Science waits. Reform waits. God and humanity wait. We fail not for want of endowments, but for want of use and application of our powers. A thousand men go to a horse race, and squander time and strength enough to build a mile of railroad; the one passes like a vapor, the other would live for ages.

The want of the age is not genius, but work. Success is a splendid prize, but is gained by that mastery of self which despises ease and indulgence and determines to win. We want workers in legislation. There are enough to take the emoluments of office. We have enough such characters to pauperize the nation. Give us honest workers in

our halls of legislation, and we shall grow to a happy and exalted destiny.

Every stroke of honest labor helps on the world's success. He who multiplies the fruit of labor blesses the world. Whatever helps to keep the heart pure and the life virtuous strengthens the arm of the worker. Vice cheats humanity and sin robs society.

We all labor but in a different sphere. The building of humanity is to go up. The work of every man is essential to its symmetry and completeness, and there should be no schism among its builders. Happy those who can bring stones of beauty to shine in the building, and still happy they who may but lay a rough block in the foundation, to support the rising structure, and receive their meed of praise, when the cap-stone shall go up with rejoicing.

CHEERFULNESS.

Happy dispositioned people are generally healthy people. The mental condition has far more influence on the bodily health than is generally supposed. It is true that the ailments of the body cause depressing and morbid conditions of the mind; but it is no less true that sorrowful and disagreeable emotions produce disease in persons who, uninfluenced by them, would be sound in health. Agreeable emotions set in motion nervous currents which stimulate blood, brain, and every part of the system, into healthful activity; while grief, disappointment of feeling and brooding over present sorrows or past mistakes, depress all the vital forces. To be physically well, we must, in general, be happy. The reverse, however, is not always true, for one may be happy and cheerful, and yet be a constant sufferer in body. Still, even in those cases, cheerfulness will be found a wonderful lightener of pain.

IMAGINATION AND WILL.

The mind and body bear such an intimate relation to each other that disorder in one occasions disorder in the other. They are affected very frequently by the same causes, and exert a reflex influence upon

one another. Keeping these facts in view, we can often trace and remove the source of real or supposed illness without the physician's aid, and thereby avoid much pain and many prescriptions. It may be asserted with safety that fully one-half of the sickness of the present day is fictitious, unreal. "*Imaginatio generat causam*," the proverb of the schoolmen, holds true to-day—"The imagination creates what it imagines." Being well, we think ourselves into being unwell. Suffering from ennui and lack of exercise, the lady in the boudoir takes to her bed under the belief of illness, and the hale farmer magnifies a chest pain into dyspepsia, on being told that this malady is becoming very common in the rural districts by reason of too much pork-eating. Physicians are applied to by hundreds to cure troubles whose existence has merely been assumed from the perusal of spurious medical books, scattered broadcast by charlatans. The knowledge of the fact that it has been hereditary in their families, has been sufficient to bring insanity upon individuals. Proofs of the powerful influence of the imagination on our corporeal nature are to be drawn from every quarter. Writing of the Chinese, Ricci says: "If it be told them that they shall be sick upon a certain day, when that day comes they very frequently will be sick, and will be so terribly afflicted that sometimes they die upon it." An instance is on record of a condemned man being found dead on the scaffold when the sheriff unbound his eyes, preparatory to reading his pardon to him. It was one of Frederick the Great's soldiers, if we mistake not, who dropped dead when, after a burlesque court-martial, twelve comrades discharged a volley of blank cartridges at him. A woman, thinking that she had swallowed a pin, was seized with severe pains. A companion, believing it was a mere fancy, caused her to retch, at the same time placing a crooked pin at the bottom of the basin. One seeing the latter, she supposed that she had cast it up, and was at once relieved of her pains.

The exercise of the will has very much to do in determining our physical condition. Many persons with weak constitutions but strong wills, have staved off sickness year in and year out, when others with

less resolution would have settled into habitual invalids. So bent was Cardinal Richelleu upon carrying out his colossal schemes that he systematically ignored his physical ailments, and, to persuade the people that he was well, frequently rode out before them in military dress, with a huge red feather in his cap and a sword dangling by his side. John Randolph and Alexander Stephens are signal examples of what a strong mind can accomplish, though joined to a feeble body. Many instances are reported of persons who have recovered from physical maladies through the power of the will, when medicines failed. Mr. Walker, author of the "Original," tells us that "on one occasion he determined to be well, and he was so." Exasperated at the eagerness of his people to hurry him to the tomb, Louis XIV. ordered a review of the army. Then, rising from his death-bed, he "rouged his pale and haggard cheeks, wigged his thin locks, padded his skeleton limbs," and dressing himself in the juvenile costume of earlier years, mounted a magnificent charger and participated in the military pageant at Marley, which drew people from all parts of Europe to witness it. Muley Molus, the Moorish chieftain, on being told that his army was hotly engaged with the Portuguese, hastily sprang from a pallet of straw, broke through his attendants, who were watching for his death, and placing himself at the head of his troops, won a crushing victory, and then lay down and expired. Determined not to yield to the common enemy, Fontenelle leaped from his couch at the age of ninety-eight, and proceeding to a royal ball, led the dance. A few years ago a Methodist missionary from the Church South to China, was sojourning in Knoxville for a short time, during a visit home. The family of Parson Brownlow sent for him to go and see that eccentric individual, observing that he was near his end, and they were somewhat anxious concerning his spiritual condition. Acceding at once to the request, the missionary was shown up stairs to the parson's room. The latter lay upon his back, his eyes being closed, and his limbs rigid. Apparently his end was near. Taking hold of his hand, the missionary said—we repeat the incident as he related it to us—"Parson, your friends

think you are going to die, and are solicitous concerning your spiritual condition. I have come to talk with you." No sooner had these words dropped, than the sick man bolted upright in bed, and turning his eyes fiercely on the missionary exclaimed: "You can go and tell my family not to be anxious about me or my soul's salvation. I shall live for twenty years yet to fight the hard-shell Baptists and the Democrats." The thought of having to abandon his long-continued warfare seemed to nerve him to make a fresh struggle for life. From that moment he began to recover, and in a few weeks' time was restored to his accustomed health. We could, were it necessary, name other instances, hardly less striking, of individuals who have prolonged their lives through their determination not to die. (New Dominion.)

OTHER INFLUENCES.

On the other hand, disease is rendered more deadly, and indeed is often induced, by fear. Men, otherwise in robust health, have perished from fear alone. Sick persons often die many hours or days sooner than they otherwise would, because of having been assured that they cannot recover. Many persons who perished in the French Revolution were beheaded after they had actually died; the "bitterness of death" having passed as the executioners fastened them to the fatal plank. Little or no blood flowed as the head was severed from the trunk. Madame Roland lived till the last moment.

It seems obvious, therefore, that in the matter of sustaining vitality, it is of the utmost importance to keep up the strength of the will. Make it worth a sick person's while to live; give him confidence that he can recover; inspire him with the purpose to get well, and very few persons would die except those who perish from old age or accident. Let the physician carry health about with him, all through his own soul, and his patients will be infected by him, so that they will often even recover from that cause alone. Health is the most contagious principle in existence.

We have learned what we know of contagion on the morbid side,

just as we know anatomy and physiology from exploring corpses. We seek the living among the dead. We are all cognizant of the theories of communicating disease, by spores of pestilence in the atmosphere, distributing small-pox, cholera, plague, and a host of maladies. We are depressed and melancholy, or gay and cheerful, when some person, often at a considerable distance, with whom we are *en rapport*, is in a like mood; and we often think of persons at the moment that they approach us. This is contagion. A sensitive person can tell whether another person, or even an animal, is near by. A merry party will make us cheerful, and gloomy company will oppress us with low spirits. Presentiment and foreboding are often morbid affections derived from others. Dyspepsia is as often as otherwise the sequence of being in unsuitable company. We have often experienced it from the contact of another person's despotic will. Nervousness comes from monotony and unwholesome associates, as well as from strong coffee and indigestible food. An imperious overbearing person often enfeebles the body as well as the will of one of more delicate organization. Even in the case of married couples, morbid conditions are induced from their near personal relations, when not attended by true analogy of disposition and temperament. Hypochondria, hysteria, dementia, paralysis, even consumption, are results of like association. Many persons appear to subsist on the vital emanations which they derive from others. King David's experiment with Abishag, the Shunamite, is an example; and the old alchemist, Roger Bacon, cited it, as constituting the only known elixir capable of prolonging physical life. On the other hand, the contact of a diseased or dead body poisons the blood and abates the vitality of the living. The dissecting-room is noxious because of the presence of the cadaver, rather than from the decomposition. Addresses from the pulpit or in the public hall often devitalize the hearers, by reason of the peculiar condition or temperament of the speaker. Sleeping in a church is an annoyance and a matter of reproach; but it is as often a safeguard interposed by nature to protect us from morbid influences, and it is obviated best by changing the air of the

room, as well as the topic and temper of the speaker. Public orators, also, in like manner, have their vitality drank away from them by persons in their audience.

For these things there is a law, which it is the physician's province to understand. It is impossible to prevent morbid contact or contagion between individuals, but the mischief of it can be obviated. Nature has implanted in the human constitution an antipathy, a repugnance against persons with whom it is not wholesome to associate. This fact should be carefully heeded. Some persons, by conversing with us, or even by remaining near us, exhaust our stock of vital energy. Melancholy persons, those of a despondent temper, and persons having consumption, typhus or other diseases characterized by great exhaustion, are sure to do this. Those who cannot stand the drain should be upon their guard. The lion, having a man in his clutches, is said to fascinate him, and render him hopeless or indifferent of life; hence it is well to keep out of the lion's way.

Fortunately there is a bright side to the picture. Contagion is primarily the source of life. The embryo derives existence, and maintains it, by the parental contact on every side. Children in a family are fed, sustained, and kept in normal condition by absorbing the spiritual emanations of their parents. Healthy mental conditions will generally destroy morbid agencies, as ozone will neutralize a deadly virus. The woman having an issue of blood, which the physicians failed to cure, is said to have been healed by touching the hem of the gown which Jesus wore; health, vitality, call it what you please, which abounded with him, flowing from him immediately and healing her ailment. So, he is said to have healed diseases by a touch, and cast out demons with a word. Such things are purely in accordance with the vital laws, which should be learned and carried into practice. Then would disease be understood and treated more wisely, as being a disturbance of the equilibrium of the soul. Insanity, the puzzle and plague of medical men and jurists, would be better comprehended and cured as readily as any fever, abscess or lesion of the body. The causes of diseases would be obviated, and

the physician would carry his restorative in his own heart, in preference to his medicine-case. The future state of existence would not be regarded with gloomy foreboding; and death, recurring in its legitimate order, would be considered as an every-day matter, timely and beneficial.

We would not overlook nor despise the use of drugs, In the peculiar physiological phenomena which they produce they are beneficial, and, in our present condition of knowledge, we must continue to employ them as best we know how. Unluckily, perhaps, but unavoidably, we know them chiefly on their more earthly, material side. A higher intelligence may, perhaps, be attained, enabling us to perceive that their peculiar virtues consist in their fixation of certain elements of a more ethereal nature, so that thereby these elements are kept at hand to be applied where and whenever wanted. This idea is not so fanciful as it may appear, but it is philosophical. We know that carbon and caloric have been fixed and stored away in the anthracite for unaccounted ages; that every vegetable is a receptacle of vitality, heat, light and actinism. Certainly, the idea that some spiritual, vital, remedial potency is fixed and stored away for use in a drug, is no greater play of imagination. Human souls are individualized and made personal by the agency of human bodies. So, vitalized substances, belonging to the vegetable and animal kingdoms, may, in some analogous manner, become agents, ministering sustenance, healing and benefit to human beings.

However little practical or philosophical these observations may seem, yet we are convinced that they come more nearly to the rational solution of the matter than may at first appear.

EFFORTS TO AVERT DISEASE.

The faculty of preventing disease, as exercised by the skin, besides being indirect and operating on the general health of the body, is also direct. The skin repels the depressing effects of cold, of alterations of temperature, of extreme dryness or moisture, by virtue of its own healthy structure, by its intrinsic power of generating

heat ; and it also repels other causes of disease, such as animal and miasmatic poison, by its emunctory power, which enables it to carry them directly out of the body. In unwholesome states of the atmosphere, in an atmosphere of malaria, which must necessarily pass into the body with the inhaled air, and being in the lungs, must be absorbed by the blood, we naturally inquire, by what means we escape the morbid effects of such malaria ? The answer is : the malaria is conducted out of the body as rapidly as it is introduced, by the emunctory organs—by the liver, kidneys, and notably by the skin. If the powers of the skin be weak, the poisons are detained in the blood, and disease is the result ; but if the skin be healthy and active, then they can do no evil ; and ultimately they become innocuous. Thus the bath, by conducing to the health of the skin, becomes a direct means of preventing disease.

We have bile from the liver, urine from the kidneys, carbonic acid and water from the lungs, and sweat from the skin. Although each of these organs has its special functions to perform, nevertheless, one can assist another in case of need. Thus it is found that when the kidney is diseased, and fails to take from the blood what a healthy kidney takes, the skin in sweat, and the lungs in the breath, carry off the products which ought to pass out of the system by the kidney. Again, when the liver is at fault, and cannot remove the bile, we find that the kidneys and the skin help to pass it out of the system. and so we get jaundice.

TRANSMISSION OF DISEASE.

“ Do men gather grapes of thorns, or figs of thistles ? ” Certainly not. A tree is known by its fruits, and the same may be said of human beings. As is the parent, so to a very great extent, will be the child. An immense responsibility rests upon us all in this matter, and most urgently and heavily it rests upon those who are just entering upon manhood and womanhood. I would ask all such to remember that they are the fathers and mothers of the coming generation. Every excess, of whatever kind, every sin

against one's own body, all immoral indulgences, record themselves indelibly upon us. Whatever evil they work upon us in our own persons, they work still more certainly and virulently upon our offspring. To the outward eye the adult may appear robust who has drawn heavily upon his stock of vitality by debauchery, but his children will be puny in body or defective in mind, or perhaps both, and early old age will sharply remind him of the sins of his youth.

It is not convenient here to enter upon a full account of all that might be urged against indulgence in propensities which war against the body as well as the soul, but without going into details, the *sexual sins* of parents are a very large factor in the mortality of little children. If the functions and powers which Providence has given us are perverted to the base uses of mere animalism, a swift and terrible retribution awaits us—our tenderest and best emotions are made the instruments of our own punishment, and our dead children rise up in judgment against us. It is certain that a very small proportion of the children who die of constitutional diseases due to the vices of their parents are certified as so dying, from the reluctance of medical men to label their patients as dying of diseases of which it is shame even to speak. What the real number is will probably never be known, but that it reaches shocking dimensions is well known to every medical practitioner. Probably the great bulk of the infants (twenty-five to twenty-six thousand) dying of what, for the sake of euphemism is called in the certificates "atrophy," "debility" or "tabes mesenterica," and the ninety-five hundred who are returned as prematurely born, and not a few of those returned in other and equally vague ways, really were victims of a disease which ought not to exist at all, and which above all other diseases is preventible, and an evidence not merely of neglect or ignorance, but of active and deliberate wickedness.

The sin of drunkenness is another parental fault which entails disease and death upon unborn generations. Not to mention the dire effects in somewhat later years of drunkenness in the parent—which expresses itself in the child as it grows up, in the form of epilepsy,

idiocy, mania and dipsomania (habitual drunkenness)—it is familiar to us medical practitioners that the children of drunkards are prone to hydrocephalus (water on the brain), convulsions, and a whole tribe of diseases of a low type, showing general degeneracy and a predisposition to brain mischief. If anyone wants proof that the laws of nature are the laws of God, he will find in the mortality of infant's ample illustration of the truth that the sins of the fathers are visited upon the children (literally) until the third and fourth generations. There is a peculiar significance, too, in the fact—which has been proved on a large scale—that drunkenness tends, after producing in its fatal course through each succeeding generation, mania, melancholy, paralysis and suicide, to end in complete idiocy and extinction of the family in the fourth generation. How many innocent but enfeebled lives go down before the final obscurity and destruction it may be painful, but will certainly be useful, to reflect upon, if from the reflection we can lay to our hearts an effectual warning against sensual pleasures in any and every form.

There are yet another class of influences affecting adults, and through them their offspring, in the shape of unwholesome and debilitating occupations. Those who are engaged in what are called unhealthy trades owe it to themselves and to their offspring to insist upon the utmost being done to mitigate their evil effects.

Says Dr. Henry Maudsley : "People think little of the power which they have over their own destiny and over the destiny of those who spring from them. How amazingly reckless they show themselves in this respect. They have continually before their eyes the fact that by care and attention the most important modifications may be produced in the constitution and character of the animals over which they have dominion—that by selective breeding an animal may almost be transformed in the course of generations ; they perceive the striking contrast between the low savage with whom they shrink almost from confessing kinship and the best specimens of civilized culture, and know well that such as he is now such were their ancestors at one time ; they may easily, if they will, discover

examples which show that by ill living peoples may degenerate until they revert to a degraded state of barbarism, disclosing their former greatness only in the magnitude of their moral ruins ; and yet, seeing these things, they never seriously take account of them, nor apply to themselves the lessons that lie on the surface. They behave in relation to the occult laws which govern human evolution very much as primeval savages behaved in relation to the laws of physical nature of which they were entirely ignorant—are content with superstitions where they should contrive to get understanding, and put up prayers where they should exert intelligent will. They act altogether as if the responsibility for human progress upon earth belonged entirely upon higher powers, and not at all to themselves. How much keener sense of responsibility and stronger sense of duty they would have if they only conceived vividly the eternity of action, good or ill ; if they realized that under the reign of law on earth sin and error are inexorably avenged, as virtue is vindicated, in its consequences ; if they could be brought to feel heartily that they are actually determining, by their conduct in their generation, what shall be predetermined in the constitution of the generation after them ! For assuredly the circumstances of one generation make much of the fate of the next.

“I have met with many instances which prove how little people are disposed to look beyond their immediate gratification in the matter. If it were put to two persons passionately in love with one another that they would have children, one of whom would certainly die of consumption, another become insane, and a third, perhaps, commit suicide, or end his days in a workhouse or jail, I am afraid that in three cases out of four they would not practice self-denial and prevent so great calamity, but follow self-gratification, and vaguely trust ‘the universal plan will all protect.’

“Those who pay no regard in marriage to the evils which they bring upon the children, nor in their lives to the sins by which the curse of a bad inheritance is visited upon them, may plead in excuse or extenuation of themselves the vagueness and uncertainty of remedial

knowledge of the laws of hereditary action. We are unable to give them exact and positive information when they apply to us, and they naturally shelter themselves under the uncertainty. The large scope of the medical work of the future is to discover those laws which have been in operation through the past to make man the superior being which he is, and to determine his future action in intelligent conformity with them; not only to cure disease of body and mind, as it has aimed to do in the past, and to prevent disease, as its larger aim now is, but to carry on the development of his nature, moral, intellectual and physical, to its highest reach."

PROPER FOOD.

The subject of dietetics stands, at the present time, in much the same relation to a healthy digestion that logic does to a sound judgment. To the man who has a good digestion or a clear head, the one or the other science is of comparatively little assistance. On the other hand, to dyspeptic individuals the theoretic knowledge of foods is of little avail towards producing a vigorous digestion, just as the rules of logic do not contract by lines of thought "the straightened forehead of the fool." To the healthful all things are wholesome. The selection of food may be left to the judgment and taste of the ordinary healthy and sane man or woman, and where experience fails to answer the question whether a given article of food is wholesome or not, the best way is not to consult the doctor, but to *give it a cautious trial*.

Some individuals, and even whole families, have remarkable peculiarities with regard to the effect of certain foods on the skin, but the cases are rare and do not affect the general question. Every one knows how shell-fish, e. g., mussels, cause nettle-rash. Cases are recorded in which even roast beef produced blotches on the skin. I doubt, however, if all the circumstances were sufficiently stated to prove cause and effect; it might have been the concomitants of the beef that produced the blotches.

CHANGE OF DIET.

It is to be noted that there is some little danger in a sudden change of diet from the fleshy, stimulating, and highly-seasoned meal, to the plainer, simpler and less seasoned but more nutritious foods. Several friends have found the use of Graham flour to cause diarrhoea, and, in some instances, loss of flesh. The transformation should be moderate.

MEDICINAL ACTION OF WATER.

The medicinal value of water-drinking is incalculable. As a solvent, a purifier, or tonic, it is beyond all praise. It is richer in oxygen than atmospheric air. It allays inflammation, stimulates the blood-vessels of the mucous membrane, and, by expelling the blood from them, relieves internal congestion. It creates appetite. It helps to eliminate the cause of disease by producing the skin irritation and boils, known by Hydropathists under the name of crises. It excites the action of the kidneys, which are the recognized scavengers of the system. It is the best drink in illness, cooling the heat of fever and helping nature to throw off in perspiration the morbid influences which oppress her. It is very calming to the nervous system, and, as we have often repeated, a great aid to digestion. It should be drunk the first thing in the morning and the last at night; and we are imperative in requiring it should be the only dinner drink. The best time for water-drinking is in the morning, and up to twelve o'clock. Dr. Beaumont found in his investigations on the stomach of Alexis St. Martin, that the coats of the stomach drink in water as rapidly as do the sands of the burning desert.

I have ever found from my own knowledge and custom, as well as from the custom and observation of others, that those who drink nothing but water are but little affected by climate and can undergo the greatest fatigue and inconvenience. —(Dr. Mosley.)

NURSING.

Do not wear a starched garment, or anything that rustles. Avoid all little noises, like the sudden shutting of a door, and the creaking

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of shoes. Sometimes the rocking of a chair, or passing the needle in and out of work or turning over the leaves of a book, or a newspaper, makes the difference between comfort and misery in a sick room. Do not jar the room by treading heavily, nor the bed by leaning against it—above all never sit on the bed.

Never wake a sleeping patient unless under the physicians orders to give medicine or nourishment or to change a dressing.

Avoid all uncertainty and strained expectations on the part of the patient. Keep his mind as quiet as possible. Allow no whispering—and even a low tone is far less objectionable than a whisper, which the patient involuntarily strains his attention to hear. Ask no more questions than is absolutely necessary, and never force him to repeat a remark. Never speak to him abruptly. Do not consult him, but quietly make the changes you think necessary. Never tax him to make a decision upon anything if it can be avoided.

Never let a sick person see, smell or hear anything about food before it is brought to him. Let each meal be in the shape of a pleasant surprise. Let the food be served with dainty neatness.

Never let the patient's head as he lies in bed be higher than the throat of the chimney, except for an occasional change of posture, or in diseases of the respiratory organs. Thus he gets all the pure air there is. His head should not be higher than the window and placed so he can see out of it. Let the sick room be the brightest in the house, and give admittance to all the sunlight the weak eyes can bear.

Do not open and shut the door oftener than is absolutely necessary. Do not mislay things so as to be obliged to hunt for them at the moment of wanting to use them.

Do not allow a place in the sick room for flowers emitting a powerful odor, such as tuberose and hyacinths, but other than highly odorous flowers are often beneficial. Place them where he can see them without much effort, and remove them at night or at the first symptoms of withering.

The bed should never be pushed against the wall. Let there be

free circulation of air all around it, and space to go in and out without jarring the patient. Do not allow reading aloud unless the patient particularly asks for it, and then it should be discontinued the moment his attention flags.

A cheerful countenance in a sick room cannot be too strongly insisted upon. Even if the nurse be tired, she must be careful to conceal it from her patient.

DIET, FOR INVALIDS.

Perfect cleanliness is an essential ; free water drinking is also prescribed, and abstinence from food which is hot or heavy. Friends should remember that they are feeding *illness* when they tempt the sick to eat when the tongue is charged, the pulse quick, etc. Perhaps it may be useful to remind our readers that "broth," that favorite invalid diet, is only concentrated meat, and therefore quite unsuitable under the conditions we have just described. We are desirous to make it generally believed that little animal food in health, and none in illness, is the wisest rule. Where the constitution is not run down by drugs there is little necessity for high nourishment. Vegetables, bread, rice, tapioca, fruit, milk, etc., are the most suitable food for those who cannot exercise. And as water is the drink we most generally recommend, we hope it will not be considered too troublesome to bring it frequently to the sick-room instead of leaving it there for hours to get warm and flavorless.

It may be worth while warning our readers against the danger of mistaking the prostration of illness for constitutional weakness, and thus falling into the dangerous error of giving nourishment in severe illness. It will be found that according as illness abates, strength returns. We have had patients who the first few days could hardly get in or out of bed without help, able to jump in themselves, as the disease subsided, though in the interval water was their sole food.

EXERCISE FOR INVALIDS.

From careful observation we find that physicians usually lay too little stress upon the necessity of out-door exercise. Even if the

amount of motion or action does not amount to what we may term exercise, simply being out-doors is essential. Sitting in an easy chair, or—if it is provided with wheels,—wheeling the invalid along the walks diverts the mind from the malady, besides the recuperative effect it has upon the physical system. If the person is able to walk he should be out regularly every day, excepting only the most severe weather. In these days of rubber boots, waterproof coats or cloaks, good gloves and umbrellas, there can be no excuse from rain or snow. Every observer has noticed the timidity with which the sick venture out-doors, when the fact is, they should have more frequent misgivings about going into the house. During rainy weather the air in the streets of cities is purer and there is less noise and excitement. In the country you can watch the grass grow greener, take in the whole scope of the heavens, see the flitting and ever-changing clouds, listen to the babbling of the brook,—feasting the mind while renewing the body.

If the many errors of our ways of living alluded to under the subjects Hygiene and Physiology should be corrected; if having a fair knowledge of the importance of air, sunlight, exercise, diet, dress and kindred matters, the reader should put them in practice, further chapters in this volume would be unnecessary and the medical profession, as a business, be as Othello's occupation, "gone." There are thousands in the United States thirsting for just such knowledge, and having obtained it, a new lease of life and happiness is insured them. It is among these that an author finds his greatest reward, and not, as a superficial observer is likely to suppose, among those who exalt his labors as an excellent literary production, who laud the ingenuity of his arguments, who praise the vivacity of his language, or the practicability of his conclusions.

But fortunately for the doctors, and sadly unfortunate for the patients, many know the truth and heed it not. A bath every day or every other day, an occasional but regular walk, chewing the food, gymnastic training, all *consume too much time*. Dr. Gibbons observes truly of such: "They prefer physic to diet, regimen, exercise."

MEDICAL TREATMENT.

DISEASES

DESCRIBED IN POPULAR LANGUAGE

AND

CLASSIFIED

ACCORDING TO MOST RECENT AUTHORS,

WITH

SENSIBLE AND SCIENTIFIC METHODS OF CURE.

Revised to Date.

BY

J. EDWIN DANIELSON, M.D.,

CLASS I.—ZYMOTIC DISEASES.

ORDER I. MIASMATIC DISEASES.

"Other wars are towards death, but in this crusade THE WAR IS AGAINST DEATH."

ELEMENTS OF DISEASE.

IRRITATION, CONGESTION, AND INFLAMMATION.

Irritation is an excess of vital action not amounting to congestion or inflammation. It may arise from a condition of the blood or of the nerves, from excitement, as convulsions from worms, irritation of the brain from teething, coughing from dust, vomiting from pregnancy, or from a condition of the system which predisposes to disease, which we term diathesis, as in the scrofulous.

Congestion is an excess of blood in a part with diminished motion. The veins are distended; there is numbness from diminished vitality and secretion is lessened. It may cease of itself, or lead to inflammation. Suppurative effusion may follow, or hemorrhage or dropsy. It is caused by mechanical obstructions, such as external pressure, constricting bands, disease of the heart, cancer of the liver, etc.; by arrest of perspiration, by malaria and other agencies.

Irritation is best managed by removing the cause or by the use of narcotics which decreases nervous sensibility. Congestion is treated

by stimulants which restore the circulation, or by the vapor-bath which calls the blood to the surface. Cathartics and diuretics diminish the amount of blood by their action upon the bowels and kidneys. Nauseants relax the system, counter-irritation calls the blood to the surface, as a mustard plaster in pleurisy or congestion of the stomach. Blood-letting would be valuable were it not for its ultimate and disastrous consequences; binding the limbs near the body is more efficient and less injurious. The use of arterial sedatives, such as *veratrum viride*, also curtails the supply of blood.

To understand inflammation it is necessary to know that the blood consists in part of serum, inodorous and tasteless like water, minute little bodies called red corpuscles, which give it life and color and fibrin, a coagulable principle. Between the arteries and veins are little vessels called capillaries. The arteries force the blood into the veins because of their great contractile power, the vein cannot contract and holds it. This is congestion, the first stage of inflammation. The capillaries are pressed, the corpuscles adhere to their sides, the arteries are swollen, there is stoppage, the nerves are put upon the stretch and we have inflammation. The swelling and heat are caused by the increased amount of blood in the part, the redness from the number of red corpuscles and the pain from the pressure. Surrounding tissues are irritated and the inflammation spreads. Serum may ooze out, or blood itself, or fibrin. The latter becomes hard as in a boil. Decaying fibrin is pus or purulent matter; if it is withheld, abscess forms. The amount of swelling is controlled by the density of the part affected; the pain depends upon the natural sensibility of the person, the distribution of nerves, as for example, whether on the finger or at its end, and the distensibility of the tissue. The nerves, however, perform their own function, and in inflammation of the stomach the sensation is not pain but thirst. Every part has an instinctive sense subservient to the economy. A substance in the throat causes coughing, but in the lung gives no pain; if it did, it would interfere with an indispensable activity of life. If the thickening of the coats of the stomach from drinking alcoholic liquors caused pain,

we would have less intemperance. Inflammation induces fever varying in degree upon the condition of the constitution, the age, the amount of inflammation and the organ affected. The fever is generally high in pneumonia, low in felon, toothache, peritonitis, etc., and low and depressing after surgical operations. It produces death when the function of a vital organ is destroyed, when the blood is poisoned by the absorption of pus, and by exhausting the vital powers. In mortification from freezing there is no inflammation; life is extinguished from the part at once.

The treatment of inflammation is a matter of the greatest importance. Upon this rock the schools of medicine divide. No general rules can be given. In the pages which follow, the indications are given with each disease and their separate management. It will be noticed that frequent use is made of *Veratrum Viride*. This is an arterial sedative; it says to the heart *so fast shalt thou go and no faster*. With the pulse at one hundred or one hundred and forty, the inflamed brain or lung or other organ is almost flooded and overwhelmed with the irritating and destructive onset. But bring the number of beats down to seventy or eighty, the eye loses its glare, the skin its dryness, the body its heat, the tongue its fire and the head its throbbing pain. The inflammation, whether constitutional as in fever or local as in an organ or part, begins to abate. The profession and people are greatly indebted to Dr. Norwood who brought this remedy into prominence. Twenty years ago arterial sedatives were almost unknown, now they are used by all the advanced practitioners of the leading schools. Just here we wish to express our obligations to Dr. P. W. Allen, who made the not less important discovery that *Veratrum* is an *antidote to blood-poisoning*. A monument more lasting than that of bronze or marble will be erected to their memories. If I was denied all the drugs of the *materia medica* except one with which to treat acute diseases, inflammations and fevers, my choice would be *Veratrum Viride*, the *tincture of the green root*. Physicians complain that there are very few remedies that are positive in their action, but this is one of them. Its effects are

more favorable in the robust of every age, but in feeble children or adults with deficient vitality I prefer and use Aconite. This exception must be observed in consulting the pages that follow.

It may be objected that Veratrum is a poison. The objection is faulty, for the same argument would apply to almost all of our most valuable drugs, such as morphine, belladonna, strychnine, the acids, Fowler's solution of arsenic and other minerals. Besides we always give it with a stimulant, generally oil of wintergreen. The essential oils are stimulants to the solar plexus, located near the stomach and one of the most important and influential in the body. Cases of poisoning must be rare, for we have not been able to find one in medical literature or hear of but one by inquiry of many physicians who use it extensively.

BLEEDING, LOSS OF BLOOD, HEMORRHAGE. *Hæmorrhagia.*

' We understand by hemorrhage blood escaping from the arteries or veins. It may flow outwards as in cuts and wounds, or inwards as in blood-vessels ruptured from weakness by disease or from straining. That blood that pours from an internal vessel may find its way out of the body. This is seen in bleeding of the lungs, in bleeding into the stomach which is vomited, in bleeding of the kidney which is voided with the urine, and in piles and dysentery where it is expelled from the bowels. Uterine hemorrhage is of this nature. If it cannot escape it collects in some of the cavities, chiefly the chest and abdomen: in apoplexy it passes into the brain substance but cannot find exit. Some make a class of active hemorrhages, such as nose-bleed from a determination of blood to the head; and passive, the oozing with debility. Surgeons speak of secondary hemorrhage, a dangerous loss of blood following a few days after an operation or a lacerated wound.

TREATMENT.

As the management of hemorrhage is given with the sketch of each disease in which it occurs only excerpts and general hints are

here presented. A good internal remedy and the most reliable for general purposes is

R.—Tincture of Fleabane,

Tincture of Cinnamon, in equal parts.

Mix.

It may be given in five-drop doses on sugar, or in sweetened water every hour, or more frequently if necessary. Heat stops bleeding and at the same time resuscitates when the hemorrhage is excessive. In desperate cases where the face is pallid and brain bloodless from severe loss, apply to the head the hot compress by the rubber-bag or by a bag of heated salt or sand. Bleeding from the lungs, womb or bowels may be stopped by drinking hot water, by hot water injections and by the spirit vapor bath. Absolute rest as far as it can be observed is necessary. Table salt makes a ready remedy in lung hemorrhage. For external wounds, or in nose-bleed, piles, and the like, there is powdered burnt cork, powdered alum, cinnamon, tannin and presulphate of iron. These can be used in powder form, and most of them in solution. The iron in water is the sheet-anchor in dangerous dysentery. From injuries a large artery may be severed, which must be tied in the manner described under the subject of Wounds, to which the reader, if interested in the subject, is referred.

FEVERS.—Pyrexia.

If it has not already been discovered that I have little to say of the theories of diseases, such has been my intention. In relation to fevers in general, however, views differ widely, some believing that a poison has been introduced which, to save life, must necessarily be expelled; others, that the symptoms of fever are but the manifestations of an internal ferment, which, if the vitality is sufficient, will in due time run its course and the patient survive; by others, that all symptoms presented are efforts on the part of nature for the removal of blood-poison and its obstructions from the system.

All admit that the presence of morbid matter in the system produces fever. As like produces like, can we expect a morbid state to produce a healthy action?

On the other hand, if fever is a healthy effort of nature to throw off disease, it follows that fever will produce healthy results. But the stronger the effort, and the longer the fever runs, the more destructive is its power. Compare a healthy increase of the circulation of the blood with fever. A healthy man exercises freely; perspiration is copious; all the evacuations of the body are open; the man has a good appetite for his food; digestion is promoted; he sleeps well, and is strengthened by the exercise.

In fever, however, the evacuations are generally closed; the skin is dry; the tongue coated; the appetite gone; and the patient is restless and reduced in strength.

If, in the course of a fever, the evacuations are open, and morbid matter is excreted freely, it is when the fever is so reduced as to allow nature to perform this healthy work. Let it be understood that the healthy work of eliminating effete matter from the system is closed by fever, and also that the rapid increase of the circulation brings the blood too frequently in contact with the oxygen of the air we breathe, thus increasing the heat, drying up the fluids and for

the time being suspending digestion, secretion, assimilation and excretion. Now, let the fever run high and continue long enough, and death is the result.

The human system is never so able to throw off effete matter, never so strong to resist the incroachments of disease, as when there is an equilibrium throughout the whole body. In our normal condition there is an equilibrium between retention and excretion, between wet and dry, heat and cold. In these and many other cases, fever destroys our equilibrium. As this general derangement of the system is caused directly by fever, with no evidence of good results, it seems very inconsistent to call fever a healthy effort of nature to throw off disease. Vitality is, indeed, in opposition to disease. But how does vitality manifest itself? The blood is passive, and only active as it is acted upon. There is no evidence that the blood rushes through the system, or any part of it, to make any attack upon disease. In a healthy state the blood silently and regularly goes the rounds of the circulation to warm and nourish the body. Suspension, perversion or interruption of any function of vitality, at once produces, or is itself, disease. Fever and inflammation are irritated conditions. Inflammation is generally local fever. Let a healthy man receive a cut, say upon his hand. Now, if the parts of the flesh can be put together as they were before, and so quick that no blood is thrown out of its course, the wound will heal without inflammation. But, as this is next to impossible, the severed veins and wound will produce some stoppage of the blood. As soon as a portion of blood becomes stagnant, it loses at least a part of its vitality, and the capillary circulation is interrupted. The blood, in its regular circulation, comes up to the stagnant blood and stops, not like a lot of boys who stop to witness a dog fight, and then run voluntarily away, but, being passive, it is interrupted in its course, and turns in with the stagnant mass, and thus we have inflammation.

In general fever the morbid matter has entered into the general circulation, and is not stopped at one place, but, being a foreign and obtrusive substance, it is the cause of irritation. The motor nerves,

thus irritated, are brought into more active play, and we have fever. In the cut and inflammation there is a pressure upon sensitive nerves, producing pain. In general fever, heat, friction and pressure affect the sensitive nerves so that there is great uneasiness and headache. How perfectly absurd is it to suppose that the blood makes an extra effort and sets up a gallop to drive morbid matter out of the system, and yet, not only fails in the attempt, but closes all the doors and aids to convert the remaining pure blood into poison. What seems more strange than this is, that the same men who contend that fever is a healthy action of the blood, should give directions to break up a fever and not allow it to run its health-producing course. Yet, the course recommended and the most successful treatment followed is, to reduce the fever by sedatives and by diaphoretics and by other eliminatives to remove the offending cause. Nor can we hope for convalescence until we have mastered the fever. Nor can the morbid matter be eliminated from the system until the fever subsides.

It follows therefore that fever is a disease, that the equilibrium is disturbed, that the natural evacuations are closed and that the most successful treatment is that which will break it up by antidoting the poison, opening the emunctories and restoring the equilibrium. In fact breaking it up, is only another term for removing the disease and saving as great an amount of vitality as possible.

In discussing the different types of fever we shall endeavor in each instance to notice the conditions which require special attention, and the best means of meeting them.

DISINFECTANTS.

DIRECTIONS FOR PREVENTING THE SPREAD OF INFECTIOUS DISEASES: Small-Pox, Scarlet Fever, Measles, Typhus Fever, Typhoid or Gastric Fever, Whooping-Cough, Diphtheria, etc. (MacLagan.)

I—1. *Isolate the person affected as much as possible from the other inmates of the house.*

This is most readily effected by at once removing him to an upper room, if circumstances permit. The room selected should be large and airy, and the means of ventilating it, which shall be presently mentioned, at once adopted.

2. Before removing the patient, all superfluous *curtains, carpets, woollen articles, unnecessary clothing*, in short, *everything likely to retain infection*, should be at once removed.

3. The patient's *bed* ought to be so placed as to allow of a *free current of air* around it, but not so as to place it in a draught.

4. *The room must be kept well ventilated*, under the physician's directions, by means either of a fire (when required), or of an open fire-place and chimney and of windows open to the external air. By means of the latter, ventilation is most effectually procured so as to avoid draughts, in the following manner:

Raise the lower sash of the window three or four inches, then procure a piece of wood to fit accurately into the lower opening, and place it there. By these means free outward and inward currents of air—without causing any draughts—are obtained through the vacant space between the two sashes. *When a window is merely opened from the upper or lower sash, draughts are invariably caused.*

5. Placing a small sheet of oil-cloth, mackintosh, or other water-proof material, beneath the upper blanket on which the patient is to rest effectually prevents the bed from being soiled by any discharges, etc.

II. 1. After removal of the patient to the room in which he is to remain, the outside of the door and door-posts should be completely covered by a sheet kept constantly wetted with some disinfecting fluid, such as *carbolic acid*, etc.

2. The room must be kept scrupulously clean. Before being swept, which should be done daily, *if possible*, the floor should be sprinkled with a weak solution of the disinfecting fluid.

3. Vessels containing disinfecting fluids should be placed in the room for the reception of all bed and body linen, towels, handkerchiefs, etc., immediately on being removed from the patient, and on no account should they be washed along with other household articles.

4. Disinfectants should also be placed in all the chamber utensils used by the patient, and, after use, more disinfecting fluid should be added and the whole contents, if possible, should be immediately buried. *No chamber vessel should be allowed to remain in the room after having been used.*

5. All plates, cups, glasses, etc., which have been used by the patient, should be rinsed with some disinfectant before being washed; and on no account should any vessels used in the sick room be washed along with other things, unless previously thoroughly disinfected.

6. Attendants on the sick should not wear woollen dresses, but only those made of washing materials.

7. Basins containing water, to which some disinfectant has been added, should always be at hand for the benefit of the attendants on the sick, who should not be sparing of their use.

8. No article of food or drink from the sick room should be consumed by other persons.

9. Visitors to the sick room, except in the case of *clergymen* and *medical men*, should be peremptorily forbidden; and they, when necessarily present, should, on leaving, wash their hands in water to which a disinfectant has been added, and should have as little immediate communication with others as possible.

III. 1. When a death from infectious disease occurs, the body should be at once placed in a coffin and sprinkled with some disinfecting fluid or powder, such as *chloride of lime, etc.*, and buried with the least possible delay.

2. On no account whatever should it be allowed to remain in a room occupied by living persons.

IV. 1. On the termination of a case of infectious disease, either when the patient is pronounced *free from infection*, or, in the event of death, after removal of the body, the sick room and its contents should be thoroughly cleansed and disinfected.

2. The bed and bed-clothes, and all wearing apparel used by the attendants or patient, should be *thoroughly disinfected*.

V.—1. In houses where a case of infectious disease occurs, no *washing, tailoring, dressmaking*, nor any similar occupation, ought to be carried on.

2. No *milk or food* of any kind should be supplied from the infected house.

3. *Children* from infected houses should not be allowed to attend schools, and all persons from infected houses should have as little communication as possible with others either in *private houses* or in public places, such as *railways, omnibuses, public-houses, churches, etc.*

4. Any accumulation of filth or refuse of any kind should be at once removed from or about the premises, and *disinfectants freely used*.

VI.—1. During the prevalence of *epidemic, infectious or contagious diseases*, it becomes specially important that the general laws regarding the preservation of health should be rigidly attended to.

2. Implicit trust should not be placed in so-called "*disinfectants*." They are very useful when judiciously employed, but are by no means certain "*preventives of disease*."

3. *Pure air, pure water, warm clothing and good food* should always be obtained if possible. By their constant use less chance is afforded for an invasion of disease.

4. *Temperance* both in eating and drinking is essential for the maintenance of health and the prevention of disease.

5. Overcrowding in houses, workshops or schools should be strictly prohibited.

6. All houses, cottages, schools and public rooms, should be kept clean and well ventilated; and frequent use of lime-washing on the walls and ceilings should be made.

HOW TO DISINFECT ROOMS. FUMIGATION.

Rooms which have been occupied by a person suffering from *infectious disease* should, on the termination of illness, be at once disinfected. To effect this thoroughly, all crevices around windows and doors and the fireplace should be closed by pasting pieces of paper over them. Lumps of sulphur (brimstone), one pound for every cubic foot of space, should then be put into a metal dish, placed by means of tongs over a bucket of water. This being set fire to, the doors should be closed, and the room should be allowed to remain without interference for three or four hours. After this time the windows should be thrown open, and when the fumes have disappeared, all the woodwork and walls should be thoroughly washed with soft soap and water, to which *carbolic acid* has been added (one pint of the common liquid to three or four gallons of water), and the paper from the walls stripped off. In whitewashed rooms the walls should be scraped, and then washed with hot lime, to which *carbolic acid* has been added. The windows should then be kept open for thirty-six or forty-eight hours.

INTERMITTENT FEVER, CHILLS AND FEVER, AGUE, DUMB AGUE.

This fever and the one immediately following are typical of all malarial fevers. Physicians divide it into stages; chill, fever, and sweat. The chill is decided and irresistible. The skin becomes bluish or purplish, and is shrunken, having the appearance commonly known as goose-flesh. The whole frame shakes; the teeth chatter; there is restlessness with headache, thirst and loss of appetite. The agitation may be so great as to impart a trembling motion to the bed or lounge on which the person lies. Feeling a draught or a finger-

touch increases the rigor. This continues for half an hour, and sometimes a full hour, but is seldom of so long duration. As this ceases, the *feverish* stage appears. The surface becomes heated, the headache intensified, the pulse more rapid, the throat and tongue dry, the urine scanty and bowels constipated. This period may last for hours; and its duration, coupled with the bodily heat as indicated by the thermometer is prognostic of the severity of the attack. As the fever abates, which it does of its own accord, and as the secretions are unlocked, the *sweating* stage advances; moisture appearing first upon the face and afterward upon the body, occasionally being most profuse. These stages constitute a paroxysm and, uninfluenced by medication, follow each other with marked regularity. There is usually a period of comparative freedom from all symptoms of the disease between the third stage and the recurrence of the first.

The paroxysm may occur twice in one day, daily, or every other day; the last two being most common. Rarely we have paroxysms on the first and third, first and fourth, first and fifth day, and so on.

The variety of intermittents is so great that occasionally it is difficult of detection by the physician. We may have the chill without any marked fever or sweat; the regularly appearing fever without any marked chill; or fever and sweat with only the slightest chilly sensations. This latter is popularly known as *dumb ague*. Still it will be noticed that with some regularity some signs of the stages appear daily, or more commonly every other day. In malarious districts *periodicity* is not only a mark of fever, but of other diseases, particularly those dependent upon congestion. *Pernicious fever* is a malignant and epidemic intermittent.

It is distinguished from other diseases without much difficulty. A chill with headache, vomiting, etc., may occur at the outset of many diseases, but the other symptoms that may be present facilitate the classification. Forty-eight hours' time will in most cases confirm the diagnosis. In wasting diseases, such as consumption, we have a recurring flush termed hectic, but this is unattended with headache and falling temperature; is less regular; and the chronic local diffi-

culty is so well marked that one cannot be easily misled. Deep-seated abscesses, while forming, are also combined with periodical chills and hectic, but the localized pain, or an examination of the larger organs—particularly the liver and lungs—will discover the real malady.

The indications are to relieve at once the stage in which the patient is suffering, to stop the fever, break up the periodicity, to relieve congestion of the liver, spleen and kidneys, and to neutralize and expel the malarial poison in the blood.

TREATMENT.

The chills in the cold stage may be relieved by giving—

R.—Chloroform,	.	.	.	.	one dram,
Comp. Spirits of Lavender,	.	.	.	.	one ounce.

Mix.

Put a teaspoonful in one or two of water, and give every ten or fifteen minutes.

If the patient is insensible, use instead of the above a decoction or tea of lobelia and capsicum. When partly cooled inject a few ounces into the bowels. Combine the use of the above with the spirit-bath by means of the rubber bag, filling it with hot water and sprinkling with alcohol.

For vomiting, particularly if it inclines to be persistent, use in teaspoonful doses every hour:

R.—Fluid Extract of Rhubarb,	.	.	.	one dram,
Brandy,	.	.	.	two drams,
Essence of Spearmint,	.	.	.	thirty drops,
Bicarbonate of Soda,	.	.	.	one dram,
Simple Syrup,	.	.	.	four ounces.

Mix.

An additional means may be employed, consisting of a sinapism made of one-third pulverized mustard and two-thirds pulverized ginger mixed with cold water, spread on a cloth and applied over the stomach.

Carefully avoid exposure in the sweating stage. To meet the re-

maining indications quinia in some form is desirable. Quinia is the great anti-periodic. Its discovery gave to humanity one of its greatest boons. Take—

R.—Sulphate of Quinia,	. . .	twenty grains,
Tannic acid,	. . .	fifteen grains,
Peppermint water,	. . .	one ounce,
Cinnamon, “	. . .	one ounce,
Simple Syrup,	. . .	two ounces.

Mix.

Give a teaspoonful every two or three hours. To an adult, or when a pill can be easily swallowed, it is better to give—

R.—Sulphate of Quinia,	. . .	twenty-four grains,
Podophyllin,	. . .	two grains,
Capsicum,	. . .	twelve grains,
Extract Licorice,	. . .	in sufficient quantity.

Mix and make twenty-four pills. Give one every two or three hours.

To act on the kidneys, alternate with one of the above, giving a teaspoonful one hour after each dose, of the following :

R.—Spirits of Nitre,	. . .	three drams,
Acetate of Potash,	. . .	two drams,
Tincture Colchicum Seeds,	. . .	half an ounce,
Water,	. . .	three ounces,
Essence Wintergreen,	. . .	one dram.

Mix.

In persons of nervous habit Quinia may be given in the hands. First wash the hands thoroughly in warm water, and when partially dried, place in the palm ten grains and moisten with water. Rub with the finger-ends or opposite palm for ten minutes or until *tasted*. For young children mix one dram with one ounce of lard and rub the abdomen with a portion. It will thus be absorbed.

For dumb ague, and to be used by those living in malarial districts, we strongly recommend the occasional administration of the following pill :

R.—Podophyllin,		six grains,
Leptandrin,		twelve grains,
Iridin,		two grains,
Extract of Dandelion,		q. s.

Mix and make twenty four pills. Take one each night and morning.

REMITTENT FEVER, MIASMATIC OR MALARIAL FEVER, BILIOUS FEVER.

Like the previously described fever, this also has three stages, and is notable for its periodicity. The principle features are exacerbation and remission; that is, the regularity in the increase and decrease of the fever. It begins with a slight chill attended with sickness at the stomach, headache, pain in the limbs, some thirst and commonly nausea or vomiting. These symptoms are soon followed by high fever, the pulse rising rapidly, the temperature increasing, with restlessness, increased headache, and pain in the back and limbs, nausea or vomiting, and disgust for food. The urine is scanty and high-colored, and the bowels closed. This fever runs its course in from six to ten hours, and then gradually subsides. With this remission all the symptoms decrease in severity. The skin may become moist and the patient sleep. The day following the attack, or more commonly on the second day, the pulse is again accelerated, the fever increased and all the symptoms aggravated, to be again followed by abatement. In this fever there is no interval of complete freedom as in the preceding variety. There is constantly present some ache or fullness of the head, some coating of the tongue, some distress of the stomach, and the biliary disorder commonly shows itself in tingling the eye-ball and skin yellow to a greater or less extent. The chill seldom reappears, the first being the only one.

It is distinguished from intermittent fever in the manner above indicated. It can hardly be confounded with other fevers which present many of the symptoms belonging to the respective groups.

The indications are to relieve the congestion of the liver and abdominal viscera, to reduce the fever, to tone the liver and thus obviate bilious congestion, and to sustain the general strength, particularly if typhoid conditions appear.

TREATMENT.

We know no better method of meeting the first than by the use of lobelia in tincture or decoction until free emesis follows. In weak systems, however, a mixture of a teaspoonful each of table-salt and mustard with a tumblerful of warm water is preferable. In the first stages of the disease, before the coats of the stomach and bowels are involved, and especially if the liver is enlarged, a cathartic may be used with advantage. We like an herb-tea composed of senna, jalap and spearmint, or a pill made of

R.—Sulphate of Quinia, . . .	twenty-four grains,
Podophyllin, . . .	two grains,
Capsicum, . . .	twelve grains.
	Mix.

Make twenty-four pills. Give one every hour until the first movement of the bowels; then stop this and of course all cathartics. To reduce the fever—

R.—Tincture Veratrum Viride, . . .	twenty or thirty drops,
Water, ...	eight teaspoonfuls.

Mix and take a teaspoonful every three or four hours. Or take—

R.—Tincture Aconite, . . .	fifteen drops,
Water, ...	half a tumblerful.

Mix and give a teaspoonful every two hours. Bathe the body with warm water, to which is added a little alcohol.

To meet the third indication we advise the use of—

R.—Leptandrin, . . .	twenty grains,
Hydrastin, . . .	ten grains,
Sulphate of Quinia, . . .	twenty grains.

Mix.

This will make ten doses and may be given in the powder with

fruit, syrup or jelly, or may be made into twenty pills and given two at a dose. Take a dose every four hours. This recipe is specially useful and effective when the skin is moist and the pulse does not beat over eighty-five a minute.

To strengthen the system when the fever has partly subsided, or to preserve the strength should typhoid symptoms appear, we make use of the best nerve and muscular tonics known in the *materia medica*. These, however, are not employed until there seems to be no further need of the veratrum or aconite and the capsicum or hydrastin pill. In one tumbler mix

Dil. Phosphoric acid, . . .	thirty drops,
Water, ...	two or three ounces,

And give a teaspoonful every two hours. In a second tumbler mix—

Tinct. Nux Vomica, . . .	ten drops,
Water, ...	two ounces,

And give a teaspoonful one hour after each dose of the above.

If other symptoms and indications arise that closely resemble a low grade of fever, they may be treated as advised in the essay upon typhoid fever.

TYPHOID FEVER.

This is also known by the names of nervous fever, abdominal fever and enteric fever. The old and young are generally exempt; the middle aged in either sex are the principal sufferers. It may attack but a single person in a locality or it may attack many, becoming epidemic. By most medical authors it is not considered contagious. It is caused principally by the introduction of animal and vegetable poisons. These causes have been considered at length in expounding hygiene, particularly while upon the subject of water, drains, etc.

SYMPTOMS.—At the outset the invalid is only aware of mental and physical oppression, languor, sometimes headache, impairment of appetite, and a careworn expression of countenance. As this falling of the nervous energies continues, there are alternate flushes of heat

and chilliness, and sometimes a distinct chill. Fever now sets in and the patient is compelled to take to bed. Within a few days the fever can be distinguished without difficulty. There is increased headache, disgust for food, thirst, hot skin increasing one or two degrees by night, tenderness of the abdomen, particularly in its lower part on the right side near the pelvis bone, or, in other words, in the region of the juncture of the ilium and cæcum, flatulence, abdomen returning a hollow and drum-like sound to the tap of the finger end, offensive diarrhoea of a dark brown or yellow color, and an eruption resembling flea-bites upon the chest. From the second to the third week all the symptoms increase in intensity, the pulse is more rapid, the heat reaching one hundred and three or one hundred and four degrees or more, the thirst is extreme, the diarrhoea more frequent, thick crusts appear upon the tongue and gums. The invalid is semi-conscious and sometimes delirious, has great restlessness through the night, the urine and stools may escape involuntarily, with incoherent muttering and either perfect quiet and indifference to surroundings, or restlessness displayed in mental agitation, throwing the hands about, removing the bed-clothes, and sometimes leaving the bed suddenly when not able to stand upon the feet. Between the third and fourth week occurs what is denominated the crisis; a change for the better or worse. In some cases the fever may linger some two or three months without any very marked change. With proper care and attention most cases will be well and attending to their avocation before the twenty-first or critical day arrives.

Care should be exercised in distinguishing the fever from typhoid conditions. There are debilitating diseases that may present many of the symptoms of this malady but having prominent features of their own. For instance, general debility is too slow in its development, delirium is absent and the tenderness of the bowels; in inflammation of the bowels pain is local, delirium and the flea-bite eruption are absent; in diseases of the lungs there is the absence of the bowel and the head symptoms; Bright's disease is known by urinary sediments.

The indications are to determine to the surface, lower the temperature, overcome brain symptoms and tendency to the head and relieve inflammation of the bowels and diarrhoea, should they occur. Simple but adequate nourishment is also demanded.

TREATMENT.

First, general method. In a majority of cases an acid seems indicated and the successes attending its administration fully warrant its use. Dilute hydrochloric acid may be given in doses of from six to fifteen drops every four or five hours, or dilute nitro-muriatic acid in doses from ten to twenty drops every two to four hours. These may be given in a tablespoonful of sweetened water or of slippery-elm tea. Milk, or beef tea or both, may be given between each dose. An alcohol and warm water sponge-bath two or three times in twenty-four hours, is of advantage, and may be used more frequently if a high temperature is indicated by the thermometer. It is reported that during the Franco-Prussian war the Germans immersed their comrades affected with the fever in cold water and then wrapped them in wet sheets. Its administration in the evening will often secure refreshing sleep. Cathartics are of avail only at the outset; afterward they are dangerous. Calcined magnesia is the best by far.

Tincture of belladonna, ten drops in half a tumbler of water, will relieve brain congestion, headache, tendency to delirium, dull and heavy expression of the eyes and countenance, and painful susceptibility to noise. Cloths wrung out of cold water may be applied to the head at the same time, changing them as rapidly as they become the least warm, and heat by the rubber bag to the feet.

Tenderness and rumbling in the bowels may be relieved by a hot pack, sprinkling upon the surface coming next to the skin the spirits of camphor or equal parts of tinctures of aconite and arnica. These act more speedily if a decoction of lobelia herb is substituted in place of water. It is an excellent relaxant and lowers the temperature indirectly by causing perspiration.

In case of hemorrhage of the bowels apply the cold pack and give

internally tincture of hamamelis in four drop doses, every three hours. Diarrhœa may be stopped by powders composed of kino and leptandrin, one-half grain of each, every three or four hours.

Upon the subject of diet, Dr. Gardner says: "You must feed your patients, and feed them chiefly on milk; milk or buttermilk, is with me the staple food, and I will even say I know no other food that can be depended upon.

To give wine, whisky, or beef-tea, while withholding milk, is simply to destroy your patient, and the more wine or whisky you give while withholding milk, the more sure you are to destroy your patient, because you are thereby superseding the natural appetite (or what remains of it) for a nourishing and wholesome diet, by a diet, if it can be so called, which poisons the blood."

CONTAGION AND DISINFECTION.

The mode in which infection is chiefly spread in this disease is by the poison contained in discharges from the patient's bowels, and lasts certainly as long as these discharges continue to be unnatural. It is believed, however, by some, that this disease is infectious in other ways. These discharges infect the surrounding air, the bed and body linen, and also all places used for their reception. Thus, if placed in a water-closet, cesspool, privy or ashpit, the sewers of a town or village, and through them the drains of houses, may, under certain circumstances, be the means of disseminating the disease. When drains into which these discharges have been thrown pass near to wells, the water in the latter has frequently been found to be perfectly unfit, indeed dangerous to use. By faulty construction of such drains, soakage is frequently caused either into wells or into the surrounding ground, rendering them directly the means of spreading the disease. Cisterns may become contaminated by having their overflow pipes terminating in drains; and even water supplied by a water company may become infected by gas being drawn into defective pipes during an intermittent supply.

Milk has frequently been found to be a fruitful medium for con-

veying the disease, either from having been placed in infected air, from which it has absorbed the poison, or from milk-pails having been washed, or the milk adulterated with water containing the infection. *Great care should therefore be taken as to the source of the household milk supply.*

The most certain and most deadly manner in which the poison of *typhoid fever* is conveyed is by contaminated drinking water. The most certain way of preventing this contamination of water is by immediately destroying the poison contained in the discharges as soon as they are passed by the patient.

Disinfectants should be placed in the chamber utensil before use; and immediately after being used more disinfectant should be added. Above all things, the use of disinfectants should be frequent and copious. The patient ought also to expectorate into a vessel containing some disinfectant.

All sheets, towels, handkerchiefs, etc., which have been used by the patient, should be thoroughly disinfected and afterwards carefully washed.

In all cases of infectious disease, it may be well that the patient use rags or pieces of old linen, etc., (in lieu of pocket handkerchiefs), which may afterwards be burned.

When the bed or body linen is soiled, the soiled spots should be sprinkled with some disinfecting powder.

A small sheet of gutta-percha, mackintosh cloth, or other waterproof sheeting, placed below the upper blanket under the patient's body, effectually protects the bed from discharges and is especially useful in this disease.

After the performance of any duty about a patient, the attendants should wash their hands freely in disinfected water.

The discharges should *never* (if it can possibly be avoided), be placed in a privy or water-closet, but should, after complete disinfection, be buried deeply in the ground at a distance from any drain, well, or watercourse. On no account should they be thrown on any ashpit or dunghill, nor into any cesspool.—(J. M. MacLagan, M.D.)

TYPHUS FEVER.

It is known by various names arising from its peculiar symptoms or from the locality where it appears. It has been called contagious typhus, brain, malignant, putrid or petechial fever, or hospital, jail or ship fever. The symptoms in its earlier stages are similar to typhoid. It will run its course, however, with greater rapidity and, in most cases, terminates in the brief period of two weeks. The brain and nervous system are principally involved and at an early stage we have excessive muscular weakness. This is eminently a filth disease and prevails but seldom in villages and the country and among well-fed, clothed and washed communities. It is highly contagious and generally epidemic.

It is distinguished from typhoid fever by the suddenness of the attack, the great weakness and prostration, the burning heat of the skin, the flushed face, the tendency to stupor sometimes from the beginning, constipation, the rash, dark-colored, covering the whole body and the more depraved, dusky, and liquid blood. In typhoid, the fever develops more slowly, the loss of flesh is greater, diarrhoea usually sets in, the face is pale and there are the abdominal symptoms.

TREATMENT.

The indications are to lower the pulse, reduce the heat, arouse the liver and spleen, and overcome the stupor and congestion of the brain and spinal centres. If the pulse is strong and full, give veratrum in two or three drop doses every two or three hours. To remove the heat frequent sponge bathing with warm water is necessary. Attention to the liver and spleen by the administration of

R.—Leptandrin, ... one grain,
 Podophyllin, ... one-eighth grain,
 Ext. Hyoscyamus, ... one-half grain.

Mix.

Or a combination of podophyllin and cream of tartar thoroughly

mixed, may be employed. Either may be administered every four hours until free evacuations ensue. The manifestations demanding the greatest care and attention is the stupor or tendency to stupor and cerebral congestion. As you value life avoid the use of opium, morphine, quinia and like remedies whose chief tendency is toward the brain ; invading and overwhelming it. Here the disease has a similar bent or inclination and needs the bit rather than the spur.

Belladonna in drop doses should be alternated with the veratrum or, if there is sleeplessness and muttering delirium give

℞.—Fld. ext. Gelseminum , . .	thirty drops,
Fld. ext. Belladonna, . . .	fifteen drops,
Water, ...	half a teaspoonful.
	Mix.

Give one hour or one hour and a half after each dose of veratrum. If the veins about the neck and head are greatly distended, tight bands may be passed around the extremities close to the body, removing one at a time and at intervals as the beats of the pulse lessen in frequency.

CONGESTIVE FEVER—PERNICIOUS FEVER.

It is more commonly known by the former title. Sometimes it is termed pernicious, and, in fact, closely resembles it in fatal cases. It is a powerful, poisonous and destructive disease, but is confined to the hotter climates,—to the southern and southwestern states of the United States. The disease is congestive because there is a tendency to the congestion of the liver, spleen, lungs, or brain. The attack is usually sudden, but not alarming in most cases. There is a chill, usually severe nausea and vomiting, thin discharges from the bowels sometimes mixed with blood, and intense thirst. When the brain is congested unconsciousness or delirium may be present. In congestion of the abdominal organs pressure not only induces local pain, but pain is felt in every part of the body. If the lungs are involved, breathing may be attended with great difficulty. There

is a palsied action of the functions of the organs involved, and the impression of the poison is so depressing that, in some cases, it kills at once. Not only is there a change in the character of the circulation, but we have also a change in the character of the blood itself. The nervous system is powerfully involved, including as it does, the nerves of organic life. There is a class to which the term "cold" is applied. Then we have the capillaries involved. There is coldness of the surface, paleness of the face, shrunken features. The extremities are chilly, cold, and have a damp sweat.

It is distinguished from other fevers by its suddenness and severity. At the outset it may resemble the intermittent or remittent fever, but in a few hours severe prostration proclaims its true nature.

The indications for treatment, though difficult to be met, are two in number : to relieve the congestion, and to eliminate the blood-poison.

TREATMENT.

If the congestion can be overcome promptly, the patient is safe, and not otherwise. Reliance should be placed chiefly upon the employment of heat and the use of cayenne pepper in decoction, both externally and internally. Cloths wrung out of hot water should be applied to the abdomen, and frequently renewed. The whole body should be frequently bathed with the same. If the lungs or brain are involved, injections into the bowel of a weak solution should be administered every half hour or hour. The intense thirst will disappear as the fever subsides. Drinking but adds to the irritability of the stomach. If the brain is involved, in addition to other treatment the extremities should be bound near the body by tight cords or bands. By this means, even in a few minutes, the veins begin to enlarge and confining the blood keeps just so much of it from the head. Mustard paste may be applied to the feet if thought best.

To destroy the malarial poison give sulphate of quinia and capsicum (cayenne pepper) in pill form, in quantitles of one grain each, mixed, for a dose. The quinia is the purest anti-malarial remedy

we possess, and the capsicum is the simplest and most effective stimulant. Besides, combining one with the other we escape the unpleasant symptoms due to overdosing with quinine.

YELLOW FEVER, BLACK VOMIT, YELLOW JACK.

This is a disease of the hot climates and prevails in the hottest weather. It seems to be contagious and malarious, but begins always in cities where filth is abundant and the heat excessive. New Orleans has been the centre of diffusion more times than one. It has traveled up the Mississippi as far as Vicksburg and the Ohio to Memphis, has been found along the coast, in Savannah and Fernandina, and, in 1853, raged in Norfolk, Virginia. An isolated case has appeared in later times in Philadelphia or Baltimore, and rarely in New York. Such cases, however, are usually of strangers and are believed to be those who have been smitten with the plague before their arrival. In cold weather the type of fever changes to that of remittent or typhoid.

The premonitory symptoms do not differ from remittent fever, but the affection is overwhelming and of short duration. There is usually a chill and pain in the limbs, back, stomach, liver and head, with quick pulse and hot skin. Fever rapidly follows and may last for two days. Thirst is intense, the stomach irritable, the bowels costive or discharges dark colored. The pain increases and extends in all directions. The nervous system is involved and not unfrequently delirium is followed by stupor, coma and dissolution.

Upon entering the second stage the fever subsides, the pulse falls, and the yellowish color, which gives the characteristic name to the malady, infiltrates the eyes and the skin. The mind clears, and the patient flatters himself that the attack is over. The shorter the time before this remission, the more dangerous the disease, the slower it comes on, the more hopeful the case. This calm is frequently deceptive. If it lasts more than a day the disease may assume a typhoid character and last three or four weeks and the sufferer live.

Usually after twenty-four hours the fever reappears with increased violence. The vomiting, more frequent at first and with greater force, brings to light quantities of altered blood. This is the "black vomit." It is similar in nature to the dejections in cholera. Diarrhœa may occur. The prostration of the muscular and nervous systems is extreme. Blood flows from the mouth, gums and nostrils, and sometimes from the bowels. The stomach is soon disorganized and the vomiting ceases; delirium, collapse, hiccoughs and death ensue.

It is distinguished from typhoid fever by its sudden appearance, the presence of the epidemic, and by its rapid changes from one stage to another; from the typhus fever by the brain symptoms, eruption and absence of hemorrhage, all occurring in the other. In some respects it closely resembles remittent fever, many of the symptoms of which, however, are milder in character.

The indications are to relieve the stomach of bilious matter, equalize the circulation, overcome the congestion, vomiting and hemorrhage, and excite the action of the liver.

TREATMENT.

Prophylactic means are of great advantage; deserting the city for the pine woods and the cooler climate, the use of the Turkish bath, and the use of some remedy that will keep up the activity of the liver and the abdominal viscera. Composition tea is valuable, or what is considered preferable, a pill composed of Leptandrin, Capsicum and Quinine.

The treatment to speedily meet all the requirements above stated, should begin with a mild emetic of tincture lobelia. This throws off all biliary matter in the stomach and duodenum and rouses the liver and spleen to activity, opens the pores and frees the capillaries. Friction is necessary and may be accompanied with bathing with cayenne tea. Combining Leptandrin and Quinia in pill form and administering at the commencement of the remission, we free the liver of congestion and oppose the malarial poison. At the same time that we endeavor to overcome the vomiting we may use such a remedy as will nullify the tendency to putrefaction. An excellent

recipe is one or two drops of carbolic acid mixed with one teaspoonful of glycerine. Mustard plasters may be applied over the region of the stomach. In many cases the cayenne tea alone has stopped the black vomit. For the hemorrhage give tannin or gallic acid.

MEASLES.—*Rubeola*.

Measles may be defined as an eruptive fever. It attacks all ages, principally the young. It is highly contagious and, as far as possible, children should be carefully kept away from the invalid. The time between exposure and the fever is from seven to fourteen days. For a few days prior to the beginning of fever there is noticeable a feeling of languor, uneasiness, oppression, and want of appetite. The most noticeable symptom, however, is that of a cold and the discharge from the nose, as in acute catarrh and occasionally watery congestion of the eyes. On the fourth day an eruption appears upon the face. This extends over the whole body, passing downward to the feet. It lasts about five days, when it begins to disappear in the same order. There are little red spots, which soon run together and form crescent shaped patches with clear skin between. They do not fill with fluid as in small-pox. When it fades it leaves a yellowish discoloration, and very fine scales are thrown off. The catarrh is characteristic. There is a discharge accompanied with sneezing, and which may linger after the disease has passed away, developing bronchitis or consumption. The skin is hot, and the temperature preceding the eruption may reach one hundred and four or five. After its appearance it steadily declines.

It is distinguished from scarlet fever and small-pox by the peculiar eruption, its first appearance on the face, its running into crescentic patches, and the constant catarrh.

TREATMENT.

There is but a single indication and this a most important one, namely: to bring out the eruption. My readers must be cautioned against the use of cathartics, which not only irritate

the mucous membrane already suffering in a similar manner as the skin, but in less degree, but principally because it may cause the disease to centre upon the mucous membrane and the bowels. Once located here it may prove fatal; otherwise there is little danger. A light physic of calcined magnesia in milk, or of the following may be given at the outset, if it is deemed imperative.

R.—Fluid Extract of Rhubarb, .	one dram,
Brandy, ...	two drams,
Essence of Spearmint, .	thirty drops,
Bicarbonate of Soda, .	one dram,
Simple Syrup, ...	four ounces.

Mix.

The use of teas of the sage and catnip by our grandmothers is founded upon fact and science. We prefer

R.—Asclepias (pleurisy root), .	one part,
Lobelia Leaves, ...	one part,
Cayenne Pepper, ...	a small quantity.

Mix.

Make a tea by steeping a tablespoonful in half a pint of water sweetened. Give a teaspoonful every hour or two. Composition tea is an excellent remedy. The surface of the body may be bathed, *under the coverings*, with tepid water, in which is mixed soda and alcohol.

We observe frequently at the termination of measles an active diarrhoea. This however lasts but a short time, and should be allowed to continue without interference; inasmuch as it is an effort of nature to rid the body of the blood-poison.

Accidents may happen and it is best to be prepared for them. In a single hour, from sudden cold or from irritation of the stomach and bowels from improper food, the rash may entirely disappear. This suppression will greatly increase the fever and in fact all the symptoms, and disturb the brain, producing delirium or coma. Safety is only assured by re-developing the eruption. The infusion, increasing the amount of cayenne, should be given hot and repeated

often. An alcoholic sweat should be administered and, if thought advisable, in addition, the whole surface of the abdomen may be treated to a hot pack with cayenne and water.

In rare cases there is an absence of the eruption upon the surface. It will however be discovered upon the fauces. The treatment should be the same in every particular as though it had appeared.

BLACK OR PUTRID MEASLES

Differs from the other only in its intensity and the darker color of the eruption. There is more prostration of the strength of the system, more headache and more active fever. This depression of the nervous system is because of deficient power or vitality to throw off the disease and bring about reaction. The stomach and bowels become congested, and there is liability to a passive hemorrhage from their lining membranes. Black measles will sometimes pass into typhoid fever.

SCARLET FEVER.

This disease is also called scarlatina, and in some parts of the country, canker-rash. It is an eruptive fever, infectious, contagious and sometimes epidemic. It is remarkable for its easy propagation, and especial precautions are necessary to limit its ravages. Infection is contained in all discharges from the body during the progress of the disease and recovery, and more especially from the skin during convalescence, when the dry scales are being shed. These latter are disseminated through the air and become attached to articles of furniture, bedding and clothing; and being inhaled, the disease may be readily conveyed to another, and by those who are not themselves suffering from it.

While measles may attack a second and even a third time, persons have rarely been known to have a second attack of scarlet fever. The young are principally affected, and seldom does a case occur after the age of twenty or under that of two years.

The disease is considered as being more mild, the older the patient.

The largest number and most malignant cases occur between the second and seventh year, and a much smaller number after the eighth year. Scarlatina prevails at all seasons, but a close air and foggy atmosphere seem favorable to its dissemination. The period between exposure and the appearance of the fever varies from a single day to several weeks. The disease in any form is the dread both of the physician and family or friends. An attack, slight at the commencement, may terminate speedily and violently in dissolution. On the contrary, a violent beginning may develop milder symptoms during its progress, and recovery be complete. This disease is followed by more organic diseases than measles. Recovery is much slower and attended with greater hazard, because a relapse from sudden cold or other cause, may produce death even after the patient is supposed to be entirely free from any symptoms or traces of the disease.

It is divided into three varieties. *Scarlatina simplex* is the mildest form, and is ushered in with a chill, followed by rapid pulse, hot skin, loss of appetite, soreness of throat and difficult swallowing. The eruption appears in about twenty-four hours, first upon the neck and chest; but in a short time the rash is equally diffused over the whole skin—scarlet in color, presenting an appearance like that of a boiled lobster. Some parts are deeper-colored than others, as the neck, outer surface of the extremities and hands. The rash consists of an infinite number of small red points situated upon a rose-colored base, with here and there a vesicle or small pimple containing a colorless fluid. The whole surface burns and itches. The throat is sore and swollen, but inflammation does not reach to that extent noticed in the second variety of this disease. On the fifth or sixth day after the appearance of the eruption, it commences to fade, with considerable abatement of the fever. The appetite speedily returns and the patient soon feels well.

Scarlatina Anginosa. The symptoms in this form of the disease are more violent than in the preceding. Vomiting and even convulsions may occur at the outset. The tongue, instead of being covered with raised red points, has a grayish coat, with interspersed red

patches. In the throat seems to centre all the violence of the effects of the blood-poison. The neck appears stiff on the second day; hoarseness and pain in swallowing; fauces, tonsils and uvula red, swollen and covered with false membrane. Suppurating ulcers are noticed in the throat. The throat and tongue are parched, the thirst great and the breath offensive. With the fading of the eruption, by the fifth or sixth day, the fever and inflammation of the throat commence to abate, although the throat may remain sore for some time after the disappearance of the rash.

Scarlatina Maligna differs only in the symptoms being more aggravated. The fever soon assumes a malignant or typhoid condition, with restlessness and delirium of a low muttering character. The tongue is dry, brown, tender and chapped; the lips, teeth and gums covered with sores. The mucous and salivary glands in the mouth and throat are much enlarged and inflamed, causing constriction and obstruction to the passage of food and sometimes of air. The eruption is irregular in appearance, dusky, or of a dark livid reddish hue. There is great prostration of strength and the tendency to, if not the development of, coma and other brain complaints.

In addition to the eruption and sore throat, other characteristics of scarlatina are the very rapid pulse and the exceedingly high temperature. The pulsations will often count as high as a hundred and forty or more a minute. The temperature ranges higher than in any



Clinical Thermometer, (Self-Registering.)

of the eruptive fevers, often reaching one hundred and ten or one hundred and twelve degrees, and continuing at this height in most cases until the eruption disappears.

It is distinguished from measles and small-pox by its having an eruption peculiar to itself, which spreads rapidly, by the reddened and raised points upon the tongue, by the frequent pulse, high temperature and by the sore throat. In measles there is the constant

catarrh and inflammation of the eyes (conjunctiva). In small-pox there is a great pain in the back, the eruption first appears upon the forehead, which soon developes pustules.

The indications are to bring out the eruption, to moderate the fever, to neutralize and eliminate the blood poison, to relieve the throat and sustain the strength.

TREATMENT.

One of the best means that can be adopted to bring out the eruption, is the alcoholic vapor bath. If the attack seems to be a severe one, or if the rash is tardy in its appearance, an emetic will mitigate its violence and cause increased tendency to the surface. We know no better agent than tincture lobelia one ounce, and simple syrup two ounces; given in teaspoonful doses every fifteen minutes until the stomach responds. In ordinary cases the use of the cayenne and hot water pack to the abdomen will be sufficient. A mild and simple, but effective remedy, is found in half-teaspoonful doses of camphor water administered every hour. The continued use of the alcohol bath or the hot rubber bag to the sides or between the knees, will moderate the fever as far as is advisable, taking strength and safety into consideration. Veratrum and Belladonna are the remedies for this fever. To neutralize the poison give five to twenty drops of tincture muriate of iron and simple syrup every four hours. If the person be old enough, this may be drawn from the tumbler into the mouth through a glass tube, having the upper end placed well back upon the tongue. If the patient refuses the iron, give instead the black cohosh tea sweetened. Two hours after a dose of one or the other of the above, the colchicum mixture (see page 244), should be dispensed. This does good service in eliminating the urea from the system, obviates the further depuration of the blood by this substance, and prevents its overpowering the brain. It will be found in large quantities in the urine. It occasionally happens that the bedding is found to be wet with urine, and the mother or nurse implies that the bladder has been evacuated. A mistake may be made here, and the real condition can only be discovered by apply-

ing pressure upon the bladder just over the pubic bone. It may be greatly distended, and the urine that has escaped be simply an overflow. If, by manipulation, it is discovered to be large and firm, a hot pack upon which has been sprinkled spirits of camphor, should be applied over the organ and renewed as often as necessary until the confined fluid wholly or partially escapes.

To relieve the severe inflammatory condition of the throat fasten around the neck a single thickness of flannel about two inches wide: Take four thicknesses of flannel, about three inches square when folded, saturate with the following liniment, and slip underneath the bandage so as to irritate the surface of the neck under the angles of the jaw :

R.—Sassafras oil,	.	.	one ounce,
Olive oil,	,	.	one ounce,
Spirits hartshorn,	.	.	one ounce.
Spirits camphor,	.	.	one-half ounce.
Mix.			

The external irritation detracts from the internal inflammation. Even if ulceration should follow, it might better be upon the surface and in sight. This treatment is also the best safeguard against deafness which so often follows, that we possess. If the throat is cankered or ulcerated, use a spray of carbolic acid two grains to an ounce of water, made by the Atomizer. The strength may be sustained by using milk porridge or other light and unirritating fluids as food. Water, in small quantities, may be given to quench thirst, and repeated at short intervals if thought advisable.

DISINFECTION OF SCARLET FEVER.

“Scarlet fever is very infectious. A very *mild* case may give rise by infection to a very *severe* one. Infection is contained in all discharges from the body during the progress of the disease and recovery; but more especially from the skin during convalescence and when the cuticle is being shed. The dry particles which are separated from the skin are highly infectious, and retain their in-

fectious nature for an unknown time, unless thoroughly disinfected. They are disseminated through the air, and become attached to articles of furniture, clothing, draperies, wall-papers, etc. Thus the disease may readily be conveyed from one person to another by those who are not themselves suffering from it. It is also conveyed, as has been mentioned, by bedding, clothing, and other articles, and by rooms which, having been exposed to infection, have not had their floors, ceilings, or walls disinfected, or had the wall-papers removed.

No child should be permitted to go to school from an infected house, and communication of such in play or otherwise with healthy children should be prevented.

When a person has had the disease, he should not be permitted to mix with others until he has perfectly recovered and has had his clothes thoroughly disinfected; and not even then without the permission of his medical attendant. Nor is it advisable that any one who has had the slightest communication with a person suffering from the disease should go to any church, meeting, public-house, fair, market, etc. Neglect of these precautions is a prolific cause of the spread of this disease.

Attendants on persons suffering from *Scarlet Fever* should be chosen, if possible, from those who have already had the disease.

It is believed that the dispersion of contagious dust from the patient's skin is impeded by keeping his entire body (including limbs, head and face) constantly anointed with oil or other grease; and some practitioners also believe this treatment to be of advantage to the patient himself. When the patient's convalescence is complete, the final disinfection of his surface should be effected by warm-baths, with abundant soap, taken on three or four successive days (under the direction of the medical attendant), till no trace of roughness of the skin remains. After this process, and with clean clothes, he may be deemed again safe for association; but previously to this, however slight may have been the attack, he ought always to be regarded as dangerous to persons susceptible of *Scarlet Fever*."

SMALL-POX—*Variola*.

Small-pox is an eruptive contagious fever, attacking all ages and spreading rapidly in districts and localities where the population is overcrowded. Being so easily carried from one to another, every means of disinfection within our knowledge should be resorted to, to confine it within limits. The time between exposure and the appearance of the fever varies from one to three weeks. The same feelings of depression and languor precede it as noticed in other eruptive fevers. With the beginning of fever there is nausea, vomiting, thickly-coated tongue, foul breath, rapid pulse, headache more or less severe, and great pain in the back. This latter symptom is characteristic. About the third day, an eruption appears of fine-pointed pimples with a hard top, upon the lips and forehead. They have not that intense red color witnessed in scarlet fever, nor the purplish red in measles, but have a medium tint. Soon after, they are noticed upon the chest, arms and body, and later, upon the limbs. A day or two after their appearance, some of them fill with water (serum), resembling little blisters; then the points flatten and the contents become milky (containing pus), with red-inflamed base, and are painful. When these pustules are not distinct and separated from each other, but, as we say, run together, the disease is termed *confluent* small-pox, and is the more dangerous of the two. The pus formed in the eruption is absorbed to a greater or less extent by the blood, and as a result of this poisoning a secondary fever develops in all its strength, and all its ill effects, and continues until the scabbing is well matured. On or about the tenth day crusts form over these pustules, which soon dry and fall off, leaving a bright red spot. If the skin has been rubbed or scratched, or if the disease has been more than commonly violent, the "pits" or indelible marks of the disease are discovered. In persons of scrofulous constitution, blood may ooze from the mucous membrane. Hemorrhage of the bowels is not infrequent, nor is diarrhoea or dysentery a rare complication. The headache is sometimes so severe during the period of invasion as to resemble inflammation of the brain. During the progress of

the fever the brain and spinal cord may be congested. Pustules sometimes form upon the eye, destroying the sight.

Suppression of the eruption is almost certain to prove fatal. Ulceration and suppuration of some internal organ rapidly follows, the nervous system is assailed at its centres, and the patient soon passes away. Occurring during pregnancy, it is very likely to prove fatal.

It is distinguished from other eruptive fevers by the peculiar eruption first appearing upon the lips and forehead, by the headache, and more especially the severe pain in the back. There is the absence of catarrh, peculiar to measles. Sore throat may be present, as in scarlet fever, but the eruption will have developed enough to differentiate the two before the throat is to any considerable extent involved. Neither the pulse nor temperature rise as high in small-pox as in scarlet fever. A secondary fever belongs specially to this disease, but it is of little importance in this connection, for days before this occurs, other manifestations have been presented which have confirmed the diagnosis. Erysipelas and this disease may be confounded in their earlier stages, but it will soon be noticed that one is limited to the face, while the other eruption shortly extends over the whole body.

Varioloid

Is small-pox in a milder form, modified by inoculation or vaccination. That protection is afforded by vaccination is undeniable, but that it is as efficient, as is popularly believed, is an error. None will deny that small-pox itself makes a greater and deeper impression upon the system, than vaccination; and yet persons have been afflicted for a second and third time with this loathsome malady. Vaccination protects to a certain extent, and to this extent is it valuable and necessary. In this modified disease both pitting and the secondary fever are absent. In the fever at the beginning of an attack, the pulse and heat of the body are influenced but for a short period; besides, the eruption is not so thick, the inflammation is diminished and the pustules ripen rapidly.

TREATMENT OF VARIOLOID

Is the same as in genuine small-pox, but the remedies need not be administered so often, and good nursing and protection from cold during convalescence, will complete the cure. Death seldom occurs. Its rarity is the principal argument in favor of vaccination.

VACCINATION.

The best vaccine virus is obtained from the udder of a cow. Pus only should be secured, and may be preserved by allowing it to dry upon quill points. The scab from the arm of a child vaccinated by this may be employed in operating upon others, providing that the health of the child and its *family history* are unquestionable.

Vaccination often fails because the operation is imperfectly performed. If the following plan is adopted, better results are insured. The place most frequently selected, being the least troublesome, is a point but little above midway between the elbow and shoulder on the outer aspect of the arm, at the insertion of the deltoid muscle. If the operation is unsuccessful upon either arm at this point, and in cases of ladies objecting to a scar upon the arm, the inner surface of the thigh about half way between the knee and perineum, may be chosen. Make a dozen slight scratches with the point of a sharp knife or lance, close and parallel to each other. Care should be taken that the cuts are not so deep as to produce bleeding. Hemorrhage produces a flow outward from the wound, fills the openings and dilutes and absorbs the virus, or drying quickly, prevents its absorption into the system. A dozen other scratches should be made passing directly across the first, preserving the same distance between each. To insure success a third set may be made, making a sharp angle with either of the other two. If the quill is used, it may be moistened in water and rubbed upon the scarred spot. If a scab is to be employed, great care should be taken to use only one that has matured upon the arm, without having been scratched or rubbed off. A second scab is useless. Trim the edges

of the piece, scrape off the under and upper surfaces and preserve in dry raw cotton wrapped in rubber or tin foil. This preserves its virtues for a month or two. A small piece of this pulverized upon china or glass and moistened, may be applied to the arm with a quill in the same manner as the vaccine-point. On the fourth or fifth day inflammation appears which continues for a week when the vesicle has reached its height and begins to decline. In a few days it disappears entirely and the scab which was formed drops off, leaving a pitted scar. A good vaccination is able to protect the individual for ten years and perhaps longer. It is performed usually during the first year of life and should be repeated after puberty. In some individuals vaccination causes indisposition with some fever. Rest for a day or two is all that is necessary, when the symptoms will disappear.

We quote Ricord's words: "If ever the transmission of disease with vaccine lymph is clearly demonstrated, vaccination must be altogether discontinued; for in the present state of science we are in possession of no criterion which may permit the *conscientious* practitioner to assert that the lymph with which he inoculates is perfectly free from admixture with tainted blood." And yet later he says: "At first I repelled the idea that syphilis could be transmitted by vaccination. The recurrence of facts appearing more and more confirmatory, I accepted the possibility of this mode of transmission—I should say with reserve and even with repugnance—but to-day, I hesitate no more to proclaim its reality."

CHICKEN POX.—*Varicella*.

Closely resembles small-pox in some particulars, but is even more gentle than the varioloid. There is little fever and the eruption appears in successive crops, confined mostly to the body. The vesicles become pointed, fill with fluid, then dry and form a scab which is soon rubbed off and leaves no pock-mark. Occasionally pustules are formed and in these instances marks may be left, but they are widely separated and few in number. Attention to diet,

the alvine evacuations, protection from draughts of air and sudden changes of temperature are all the care necessary.

TREATMENT OF SMALL-POX.

The indications in small-pox are to develop the eruption, neutralize the poison, reduce the fever, support the system, and prevent pitting of the face.

The eruption can be well developed by the use of the alcohol vapor bath, but it is preferable for several reasons to use the lobelia emetic. The body may be bathed under the bed coverings with hot water and alcohol. As in all eruptive diseases, harsh cathartics must positively be avoided. If in the early stages movement of the bowels is thought to be necessary, give a teaspoonful of calcined magnesia in milk. Lobelia seems to have a specific effect upon the blood poison and should be given in doses of from three to ten drops every four hours. Two hours after each dose administer the same quantity of tincture or infusion of pleurisy root (*asclepias*). When suppuration and secondary fever begin, supporting treatment is indicated. A small quantity of milk to which is added a few drops of capsicum (*cayenne*) may be given every hour or two. Beef tea is valuable for its stimulating effect. Wine-whey or milk-punch, may be necessary.

The worst marks upon the face are caused by rubbing or scratching. The itching frequently seems unbearable, and the hands seek the face unconsciously or regardless of results. Pitting may be prevented by either of three processes: first—

R.—Glycerine,		one ounce,
Carbolic Acid,		twenty drops.
		Mix.

With this saturate pieces of old linen and lay upon the face. The objection to this is that it requires changing every three or four hours, besides necessitating careful and accurate adjustment.

Second. Add glycerine to collodion. With this paint the whole face, using a camels' hair brush.

Third. Dissolve india-rubber in chloroform and apply with a brush.

HECTIC FEVER.

The medical profession are in the habit of applying this term to a group of symptoms, which make their appearance during the latter stages of debilitating diseases. It is met most frequently in long continued fevers, in organic diseases particularly, in marasmus and lung consumption and in slow poisoning. There is great loss of flesh, palid surface, red, smooth and clean tongue. scanty and reddish urine, a redness of the cheeks during the afternoon called *hectic flush*, excessive perspiration during the night and sometimes diarrhœa.

TREATMENT.

This belongs properly to the disease which causes the hectic fever. We find this a convenient place however to make a few remarks upon the subject of *night sweats* which are so exhausting. One remedy will be advised in considering the treatment of consumption. There are others little less valuable that may be more convenient. The leaves of the sage is an old remedy. Take of sage leaves a handful, boiling water a half pint. Steep, cool, strain through cotton cloth and sweeten. Take in the evening. Most physicians rely upon acids, which seem specifically indicated by the red tongue. A pleasant form of administration is :

R.—Sulphate of Quinia,		sixteen grains,
Compound spirits of Lavender,		two ounces.
Aromatic Sulphuric acid,		sixteen drops.
		Mix.

Take a half teaspoonful in water every four hours.

Another still more pleasant than the last, as effective generally, and requiring but little medicine, is :

R.—Fluid extract of Gelseminum (green root),	one dram,
Essence of Wintergreen,	 twenty drops,
Simple Syrup,	 four ounces.
	Mix.

Take a teaspoonful every two, three or four hours.

CHOLERA.

ASIATIC, INDIAN, ORIENTAL, SPASMODIC, PESTILENTIAL, &c.

This is an epidemic and infects districts more or less extensive, sometimes sweeping over whole countries. The first approach of the disease is felt by uneasiness, headache, lassitude and diarrhœa. This latter may be painless and slight and attract little notice. This may lead to a fatal mistake, as many an one has lost his life in consequence. The patient next complains of nausea and inclination to vomit. The pulse is quick but feeble. These symptoms last but a short time, when the dreaded prostration or collapse follows. The discharges from the bowels are colorless, inodorous, frequent, and resemble rice-water or whey, and signify destruction of the mucous membrane and decomposition of the blood. The vomiting becomes more severe, and has the same rice or water-gruel character. Cramps of the toes and fingers appear, soon involving the hands, arms and legs. Thirst is intense. Although complaining of heat, the skin and tongue are cold, the cramps severe, the skin and lips blue, eyes sunken, urine suppressed, and pulse almost imperceptible. The discharges are thin and continue, while the patient rapidly sinks.

It is distinguished from cholera morbus by the more sudden and greater prostration, by the rice-water discharges, and by the prevalence of the epidemic. Both disorders are attended with cramps, vomiting and purging.

The indications are to check the diarrhœa, promote perspiration, and establish reaction.

TREATMENT.

At the outset it is easily arrested. There is no better remedy than the neutralizing mixture made of—

R̄.—Fluid Ext. of Rhubarb,	.	.	one dram,
Brandy,	.	.	two drams,
Ess. Peppermint,	.	.	thirty drops,
Bicarbonate of Soda,	.	.	one dram,
Simple Syrup,	.	.	four ounces.
Mix.			

Dose, a tablespoonful every half hour or hour, according to circumstances.

To the above may be added with advantage one ounce of tincture of capsicum, or one ounce of spirits of camphor, or an ounce of the tincture of xanthoxylum.

If there is much pain and the diarrhœa is active, give—

R.—Tincture of Opium,	.	.	one ounce,
Tincture of Camphor,	.	.	one ounce,
Tincture of Capsicum,	.	.	one ounce,
Chloroform,	.	.	three drams,
Alcohol, sufficient quantity to make	.	.	five fluid ounces.
Mix.			

Dose, twenty to sixty drops. Rest in the horizontal position is imperative. A diarrhœa in hot weather should be the signal for a day's rest. The excessive thirst noticed in some must be only partially gratified. Bits of ice answer the purpose. Much fluid aggravates all the bad symptoms.

If the cramps are excessive and frequent take—

R.—Comp. Spirits Lavender,	.	.	one ounce,
Chloroform,	.	.	one dram,
Fluid Ext. Gelseminum,	.	.	two drams.
Mix.			

Give a teaspoonful every half hour in alternation with the above. If collapse is threatening or has actually occurred, no time must be lost or any means left unemployed that will produce perspiration. Internal stimulants, like cayenne pepper or composition tea, are likely to fail without external heat assists. The spirit-bath is now the anchor of hope. Equal parts of warm water and alcohol should be poured upon flannel that has been wrapped about bottles of hot water, securely corked, or about hot bricks or stones. Place four or five close to the body, but not near enough to touch, and cover well with bed-clothes. When perspiration is fully restored and kept up for some time, the patient is safe. Then water, a teaspoonful at a time, may be given, gradually increasing the quantity; chicken-

broth, milk and beef tea are in order. Bear in mind, however, the probabilities of relapse, and that it is precipitated usually by dietetic and other irregularities.

A LIST OF DISEASES classified as *Miasmatic*, but considered under other headings.

INFLUENZA, see Class III, Local Diseases, Order IV, Diseases of the Nose.

DIPHTHERIA, QUINSY and MUMPS, see Class III, Local Diseases, Order V, Diseases of the Mouth, Fauces and Esophagus.

CROUP and WHOOPING-COUGH, see Class III, Local Diseases, Order VII, Lung Diseases.

DIARRHŒA and DYSENTERY, see Class III, Local Diseases, Order VIII, Bowel Diseases.

CHILD-BED FEVER, see Class IV, Genetric Diseases, Order II, Of Women.

ERYSIPELAS, CARBUNCLE and BOIL see Class V, Order II, Diseases of the Skin.

GANGRENE, see Wounds.

ORDER II. ENTHETIC (*Inoculated*) DISEASES.**HYDROPHOBIA, CANINE MADNESS,—*Rabies*.**

This disease is *rare*, and although many cases occur to which the name is given, it has been proven beyond doubt that my statement is correct. Most of the sufferers from the feigned disease may have been bitten by a sick dog and the effect upon the mind is such that the difficulty in swallowing may supervene and eventually terminate in death. The progress in this direction has been stopped at times by the exhibition of the dog when excitement and worry were the causes, and these have been removed. When superstition induced the attack an announcement of the death of the animal has brought about recovery. The *fear* of hydrophobia is a disease only developed in the intelligent; the true ailment, uninfluenced by the mental faculties occurring mostly in young children. It is a popular fallacy to believe that hydrophobia occurs most frequently during the excessive heat of summer. The careful collation of two thousand cases shows that they are about equally divided among the four seasons; that as many cases occurred in Winter and Spring as in Summer and Autumn. Another prevalent opinion equally erroneous is that all bitten are inoculated. Clothing, as a usual thing, protects the body, and may be described as wiping the tooth before its insertion in the flesh. Again, the tooth may have received such a cleansing in the person or animal previously bitten. Still another popular error is to make every effort to kill the animal. By so doing the parties receiving the wounds, their friends, and the physician himself, are left in the greatest uncertainty both in regard to the presence of this disease and

the possibility of its being another easily recognized and having no connection with the dreaded malady. A physician in Indiana believes the cause to be unsatisfied sexual desire, overheated blood from running, and want of food during the time, all tending to vitiate the saliva, and when a struggle occurs among the dogs for possession of the female, the one bitten sufficiently deep becomes rabid.

TREATMENT.

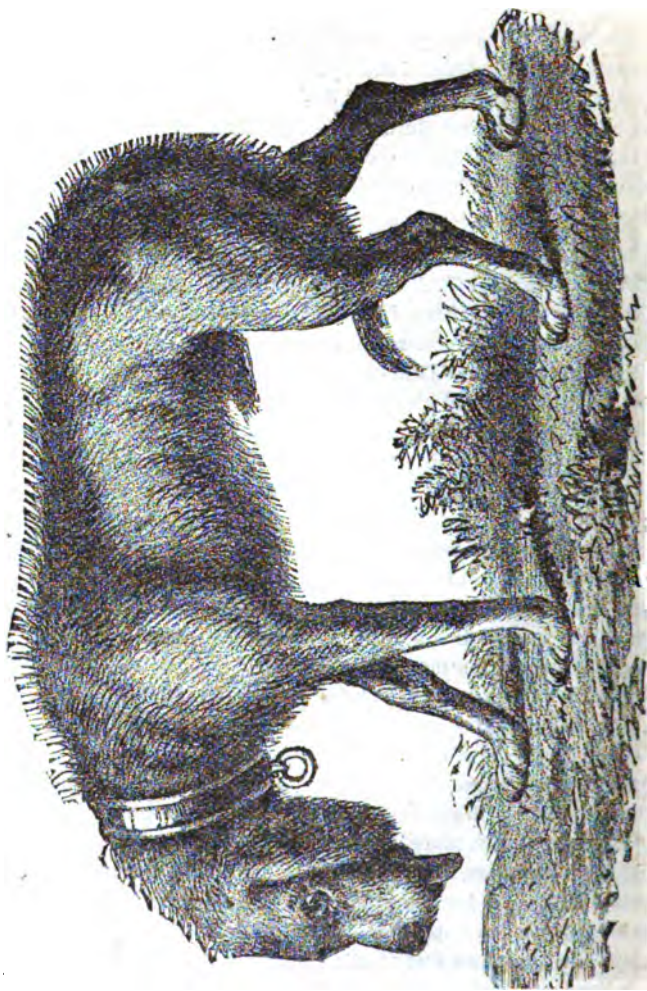
There is nothing known to man so powerful to relieve the spasms as the spirit vapor or Turkish bath, and there is no relaxant so powerful and so free from harm in its effects and results as lobelia inflata. The drug may be administered in tincture, syrup or decoction.

Dr. John Cameron of Delaware mentions three little girls, aged respectively four, six and nine years, being bitten by a rabid dog. All the animals bitten by the same dog (and there were a number of them), died of this disease within five weeks after they were bitten. The wounds were cauterized, but not until the day after the wounds were received.

No means have yet been found to equal in curative effects those of the Turkish bath. It is now some fifteen years since Dr. Buisson, a French physician, was cured by the vapor-bath, and yet it does not receive the approbation by the profession to which it is entitled. Drugs, frequently the most powerful and poisonous have been administered, very little thought being given to the probable effects of such upon a person of sound body and in good health. It reminds us of the heroic use of opiates with persons who have received severe injuries. Being unaccustomed to such excessive stimulation, doubts often arise, and with good reason, as to the cause of loss of life.

Animals are much more likely to become maddened in cities, and these fortunately are, at the time of this writing, well supplied with Turkish baths. A healthy public opinion should be aroused upon this subject, and an imperative demand made that the sufferer shall receive this treatment first of all; one which is least harmful, and we believe most encouraging and effective.

In the above instance, the baths were given daily for two weeks,



RABID DOG. (First Stage.)

RABBIT DOG. [Second Stage.]



commencing on the sixth day after the wound. The delay was caused by the vain efforts of the physicians to interest others in their behalf and the treatment finally adopted. All the children are now alive and well.

Dr. Cook of New York narrates a case of a child two years and a half old who was bitten by a spitz dog. Although this case terminated fatally, the beneficial influence of the Turkish bath was emphatically proven. The treatment did not begin until several weeks had elapsed, and the doctor believes the real cause of death to be a want of food for thirty-six hours previous to the bath.

BITES OF POISONOUS SNAKES, SPIDERS, &c.

The bite of a snake differs from that of a rabid dog in one important particular. The tooth of the dog may be wiped by the clothing and thus freed of the poison before entering the flesh. The fang of the snake is hollow and the poison is injected into the flesh through this canal, and although the wound is not deep, the surrounding flesh must be instantly cut away or this means of relief is unavailable. The swelling should be treated the same as erysipelas and gangrene or ulcers, by compresses wet in a solution of sulphate of zinc or carbolic acid. The poison renders the blood pasty and stops its circulation. It is for its interference with this process that alcohol or whisky are valuable. Besides it keeps up the circulation, prevents exhaustion, and abates in a great measure the shock to the nervous system. The water of ammonia taken internally has a similar effect and is preferable if it can be injected into the flesh or into a vein by the hypodermic syringe. Neither of these are *true antidotes* to the poison—do not neutralize it—but are valuable in resisting its prostrating effects. “Bibron’s antidote” very often signally fails, to say nothing of the difficulty attending its preparation and preservation. We might expect from India, where snake-bite is so common, a valuable antidote, but the natives “have little faith in the practice of educated physicians and unbounded confidence in the ‘charm’ treatment of the native medicine men,” and thousands perish annu-

ally. It is reported that those who are bitten by a certain snake are tied to a vehicle and made to run, accompanied by the awakening admonitions of a sharp whip. The object, evidently, is excessive perspiration. From another source we learn that a man bitten by a rattlesnake, being at a distance from home, ran thither to die. This caused profuse perspiration and cured him. These reports require corroboration, but they suggest the use of the skin as an outlet for the venom. It is more sensible to have a current in every part tending towards the surface than one flowing inward toward the vitals. Probably the best antidotes lie in the plants of the Euphorbian variety and principally in the *EUPHORBIA PROSTATA*. Dr. Irwin, U. S. A., reported his investigations and experiments in 1861 and found it a *specific* in every case. "Knowing how abundant the several varieties of *crotalus* (rattlesnake) are in this region of country and never having heard of a case of death from the poison of this reptile, I inquired amongst the natives, Mexicans and civilized Indians and learned that although such injuries were very common they had an efficacious antidote in what they designate as 'Gallindrinia.' The *Euphorbia Prostata* grows plentifully in dry, hard, sandy places, especially in roadways, farm-yards, pathways and in a hard, compact and gravelly soil and has a frail, delicate appearance resembling in its external character the gold thread (*coptis trifolia*) with long filiform, reddish stems that spread and interlace with each other. Leaves petaloid, obcordate, regular, opposite, of a deep green color and varying in length from three to five lines (about an half-inch). Flowers axillary and very small, white with dark purple throat. Sepals four, petals four. Pentandria Monogynia. Root quite large, dark brown color and possessing an abundance of milky juice, which pervades all parts of the plant; taste insipid; odorless. Flowers from April till November." To test it "experiments were made on many dogs and extended through a period of many months, with like satisfactory results. The fresh milk-like juice of the stem, root and leaves was extracted by pounding in a mortar and diluting with water. . . . In the southwestern portion of the United States and

in Mexico it grows plentifully through the whole year ; its preparation is simple and its administration is unattended with danger to the animal economy. The Mexican population of Arizona and Sonora, who are frequently subjected to the poisonous wounds from the rattlesnake, coral snake, vinegrilla, scorpion, centipede, tarantula and a host of other hideous creatures, are never injured fatally, as they resort to this specific which never fails to produce a sure and speedy cure."

In more northern latitudes the chief antidotes are known as Devil's bit, Gay feather and Buttonsake root, of which the roots are the only parts used, and the following plants : spurge, milk-weed, milk-pursley, wild ipecac, lion's foot or white lettuce and Rattlesnake violet. All these are used in the same manner. The root or whole plant is bruised and a decoction with milk or warm water made and drank. At the same time a poultice of the same is applied to the wound.

A simple remedy that can be had at any drug store or can be carried in the pocket in dangerous districts is Iodine tincture. Add twenty-five drops to a tumblerful of whisky and give a tablespoonful every hour. It is reported that "where the patient was swollen terribly, mottled spots appearing over the entire body, breathing with great difficulty and apparently near death, four drops of Iodine were given every hour with entire recovery."

In stings from bees, wasps, hornets, etc., the poison is urous acid, and may be neutralized by applying a paste of calcined magnesia and water or prepared chalk and water, or ammonia water. If the sting is in the wound pick out with a needle or forceps.

The bites of fleas, mosquitoes, and bedbugs may be treated in the same way. It is a difficult matter to poison fleas as they occupy so much territory. They may be driven away by sprinkling the clothes and bed coverings with essence of peppermint, spirits of camphor or solution of carbolic acid. Bedbugs may be poisoned by brushing with a feather or camels' hair brush all cracks or cavities about the wood work of a bed room and its furniture with corrosive

sublimate, two drams, water and alcohol each one-half pint. Repeat once a month. After each operation throw away the remainder and break the bottle. Complicated furniture should be taken to pieces, and the binding in upholstered work removed and all folds opened and touched with the feather before replacing. Special attention should be given to the part farthest removed from the window or entrance of light. One or two such thorough trials will last a season. Still a weekly "hunt" will do no harm. Mosquitoes may be driven away by smoke of most any kind. This is only a temporary relief. By far the best protection is netting, in the windows and over the beds.

POISONING BY VINES AND SHRUBS.

There are but few species of vines common to this country which are poisonous, and they belong to what is technically known as the *rhus* class or order. They are known in different sections by different names, and are confounded with each other. They are more commonly called poison oak, poison ivy, poison ash, poison wood, poison sumach, swamp sumach, poison elder and poison dog-wood. The symptoms are pain, redness, eruption, swelling and severe itching. The face and hands, and particularly between the fingers are first involved. This rash may appear in spots on different parts of the body, and is always accompanied with the most painful itching, sufficient sometimes to deprive the person of sleep. Its duration is from a few days to two or three weeks. Occasionally it will produce a feverish condition and so disturb the constitution as to require medical treatment.

TREATMENT.

Washing frequently with soft water, in which is dissolved saleratus or baking-soda, will allay the itching and pain and give relief for an hour or two. If more efficient means are needed, dissolve—

R.—Sulphate of Iron, finely powdered,	one ounce,
Water,	one pint.
	Mix.

Bathe the parts affected, or, better, the whole body two or three times a day. Internally may be administered—

R.—Tinct. Rhus Tox., ... ten drops,

Water, ... two ounces.

Mix.

Take a teaspoonful every two or three hours.

POISONING AND ITS TREATMENT.

(Poisons not Inoculated.)

Dunglison defines a poison to be "any substance which when introduced into the animal economy, either by cutaneous absorption, respiration, or by the digestive canal, acts in a noxious manner on the vital properties or the texture of organs." Quantity is an important factor: the amount of harm done being in proportion to the amount operating. A substance may be a poison and yet be taken in such minute portions that it is no longer noxious but on the contrary salutary. Many of our most important remedies are poisonous and it would be impossible to substitute the non-poisonous. Many of our foods contain these subtle agents, but the amount is almost inappreciable or so combined chemically as to be far from injurious.

In the trades and manufactories poisons are most frequently received through the skin or by the lungs, and the effects are slowly but constantly progressive. In the household they are accidentally swallowed. The careless and indiscriminate use of poisons for rats, mice, insects, etc., particularly among children, cannot be too severely censured. Caution has been preached to "older heads," who should *know* better about finding a bottle in the dark and swallowing part of its contents. Occasionally physicians pay the penalty of such recklessness. *Have all bottles labelled.* If not labelled, empty them and break the bottle. Bottles that have contained medicines or poisons should be broken first and then disposed of. *I never use the same bottle a second time.* Glassware is too inexpensive to take the

least hazard. *Smell and taste* before swallowing. You might better burn your tongue than eat a hole through your stomach. Poisons should be placed in an odd-shaped bottle. A three-cornered one has been manufactured for this purpose, but the objection is, it is difficult to find outside of large cities. A plan adopted in my family for years is to *tie a red ribbon* in a hard knot about the neck of the bottle, leaving ends to hang. In the day time this speaks for itself, and necessitates reading the label. If it was handled in the dark the touch of the ribbon would suggest, in an unmistakable manner, the *danger*. In supplying outfits of family remedies I enclose the bottles containing remedies to be used with care or in drop-doses in neat metallic cages, made specially for this purpose.

The treatment in general consists of the use of substances, which, by chemical combination, neutralize, as acids with alkalies, and *vice versa* ; by solvents, which take up the poison, as olive oil with carbolic acid ; by emetics which dislodge it, as mustard and warm water, sulphate of zinc and warm water, or tickling the throat with a brush, feather or the finger ; by the stomach-pump if at hand ; by stimulation, until the effects pass off, and by electricity and the treatment about to be given for apparent death or suspended animation. For emetics it will not do to use lobelia and other nauseants, as these relax the system and encourage absorption. Mucilages, such as the white of the egg or slippery elm tea, may be given to shield the coats of the stomach and intestines, and these followed with castor oil and magnesia, to carry it away from the system. We will notice some of the more common poisons, their symptoms and the particular treatment for each.

ACIDS. *Acetic acid, Citric acid, Tartaric acid.* The symptoms are, sour taste, burning of the throat and stomach, cramping, thirst and the matter vomited is streaked with blood. Give calcined magnesia, a teaspoonful to a pint of water, stir and give frequent draughts. Vomit occasionally to relieve the stomach of its gas and liquid contents and to supply fresh antidote. When the burning ceases give mucilages and cathartics.

Sulphuric acid (oil of vitriol). Symptoms same as above but intensified. The matter vomited has the appearance of coffee grounds and is streaked with mucus and blood. Give as little water as possible, for in combination with this acid it *produces great heat*. Calcined magnesia and water or soap and water in the form of paste or soft soap is the remedy. Follow with emetics and when burning ceases, white of eggs, glycerine or slippery elm tea.

Muriatic acid (spirits of salt) *Nitric acid* (Aqua Fortis) *Oxalic acid* (salts of sorrel). These are powerful corrosive poisons and must be antidoted promptly. The latter is often taken by mistake for Epsom salts. Oxalic acid is sour, not bitter like Epsom salts and is more transparent. Give the carbonates of lime and magnesia. The stomach pump should be used, but cannot always because the membranes and tissues of the throat are already destroyed and the instrument only adds to the injury.

Prussic Acid; *Oil of Bitter Almonds*, *Laurel Water*. In any appreciable dose this is immediately fatal. In smaller quantities its poisonous effects produce dizziness, headache, paralysis of arms and legs, and foaming at the mouth. Give stimulants, dash cold water on the head, rub and strike the body all over.

Carbolic acid is also corrosive. Give olive or castor oil, any fats, or glycerine. Calcined magnesia is a good antidote.

ALKALIES, *Ammonia*, *Aqua Ammonia* (spirits of Hartshorn), *Muriate of Ammonia* (sal ammoniac), lime, potash, nitrate of potash, (saltpetre) carbonate of potash (pearlash, lye). The symptoms are severe burning in the throat and stomach, and sometimes vomiting of bloody matter. Give frequently a tablespoonful of vinegar or lemon juice. Follow with cathartic of castor oil.

ALCOHOL. The symptoms of intoxication may continue for sometime before insensibility. In another part of this volume we have noted the difference between this condition and others (see Coma.) It also resembles the effects of poisoning by opium. In the former, however, the face is generally flushed and the pupils dilated; in the latter the face is pale and the pupils contracted. An emetic

will reveal the true state of affairs. Give an emetic of salt or mustard ; if the head is hot dash water upon it, keep up motion and rubbing and slapping to increase the circulation.

ACONITE. This root has sometimes been swallowed for horse-radish. The symptoms of poisoning by this means or by an overdose are tingling and numbness of the tongue, throat and limbs, difficulty of swallowing, severe pain in the stomach, vomiting and purging, pallid skin, labored breathing, impaired sight, dilated pupils, feeble pulse and great prostration. Give an emetic of sulphate of zinc in water or of three or four spoonfuls of table salt and water. Use an alcoholic stimulant or mix ten or twenty drops of water of ammonia in a little water and inject into the skin. To keep up the strength while the effects of the poison last, give tincture of nux vomica in five drop doses every hour.

ANTIMONY. *Tartar Emetic, Muriate* (or butter) *of Antimony, Oxide of Antimony.* These salts have also been taken in mistake for Epsom salts. The symptoms are burning pain in the stomach, violent vomiting and purging, cramps, spasms and collapse. Give an astringent infusion of oak bark or strong tea after unloading the stomach by tickling the throat or by copious draughts of warm water or flour of mustard and water.

ARSENIC. *White Arsenic, Yellow Sulphuret of Arsenic* (King's Yellow), *Red Sulphuret* (realger), *Oxide* (fly powder), Ratsbane, Fowler's solution, arsenical soap, arsenical paste, Scheele's Green, Paris Green. It is met most commonly in the various powders for the destruction of vermin and in the colors for paints and paper hangings, (see Arsenical Walls). The symptoms of poisoning come on in about an half hour after swallowing. That absorbed from pigments is very slow in its operation, but as soon as recognized should receive antidotal treatment. There is a nausea, violent burning pain in the stomach, vomiting and purging, intense thirst, great prostration, convulsions and death. Give a powerful emetic at once. The sulphate of zinc and water is good. Milk may then be given and the emetic repeated. It may require three or four repetitions to

dislodge the sticky paste from the walls of the stomach. Next administer the antidote. The hydrated peroxide of iron is usually prescribed, but it deteriorates by contact with the air. It is much better to make a fresh and perfect antidote when wanted. This may be used in almost any quantity without injury. It is simple and always accessible.

R.—Muriate tincture of iron, . . . one dram,
 Bicarbonate of soda, . . . one dram,
 Warm water, . . . a teacupful.

Mix.

Thus the sesquioxide of iron is immediately formed in a solution of common salt. Oils or mucilaginous drinks should be given to protect the stomach.

BELLADONNA. *Deadly Nightshade.* Children have been poisoned by eating the berries and by accidental overdose of the prepared drug. The symptoms are hot and dry throat, flushed face, dilated pupils, staggering gait, delirium and coma. Give an emetic of sulphate of zinc and warm water and follow with brandy and laudanum.

CANTHARIDES. *Spanish fly.* This is ignorantly given with criminal intent. It produces burning in the throat, thirst, vomiting and purging, sharp pains in the bladder with desire but inability to pass water: if any escapes it pains and scalds. The prostration is great and sometimes fatal. Give emetics with warm water, follow with oil and stimulants, if necessary.

CHLOROFORM and ETHER. In certain diseases of the heart a slight effect may produce death. When chloroform is carelessly given and its influence is increased until the voluntary muscular system is involved, the breathing becomes slower, the pulse fails, the countenance becomes livid and the heart ceases. The most frequent difficulty experienced by its use comes from vomiting and the lodgment of the food in the throat. The party is unable to remove this and needs assistance or suffocation ensues.

TREATMENT.

Much can be done in the way of anticipating trouble and preparing for it in advance. The patient should fast six or eight hours before

its administration. A half hour before give a drink of brandy, remove all constrictions about the neck and waist. The patient should be confident and not averse to the anæsthetic, and the physician or attendant cheerful; the first inhalations but slight and well mixed with air; the position as near horizontal as possible. Above all, the chloroform or ether must be pure. With the first appearance of deficient or oppressed breathing apply spirits of ammonia (hartshorn) to the nostrils. If vomiting occurs, turn the head to one side and clear the throat with the finger. If danger still threatens and the face is pallid lower the head and shoulders, apply the ammonia, sprinkle the face with water or dash it upon the head and give vigorous blows with the palm of the hand upon the back or sides below the shoulder blades and prepare for and if necessary resort to, artificial respiration as elsewhere described. This should be kept up for a long period even after all appearance of life has ceased.

COPPER. *Sulphate of Copper* (Blue Vitriol), *Subacetate of Copper* (Verdigris). This poison will be found in acid foods or fruits cooked or kept in copper vessels. It is copper that gives the green color to pickles. The symptoms are coppery taste in the mouth, pain in the head and stomach, griping, vomiting, purging and sometimes convulsions. Give emetic of warm water or mustard and warm water. Do not give vinegar or acids. After emesis give milk or white of egg and oil.

GELSEMINUM. The symptoms are those of complete relaxation: inability to raise the foot, hand or eyelids, speech difficult and indistinct, countenance pale. Even these symptoms will gradually wear away in from six to twelve hours and leave no bad effects. Place the subject upon the back and have him remain so. The danger is in sitting up or standing up. The antidote is Nitrite of Amyl: a few drops upon a handkerchief and the vapor inhaled. This flushes the face and may be employed at short intervals as long as the countenance continues to possess the deathly palor.

HEMLOCK. *Poison-Hemlock*, *Water-hemlock*, *Poison-parsley*. The leaves of hemlock have been taken in mistake for parsley and the

root of the water-hemlock for parsnips. The symptoms are dryness of the throat, thirst, dizziness, nausea, numb feelings, paralysis and convulsions. Give emetic of sulphate of zinc and water or salt and water, stimulants. Keep up motion and rub the extremities.

IODINE. Poisoning may result from swallowing a lotion containing this drug or from its use as a remedy on account of sensitiveness to its influence. The latter is called Iodism. The symptoms of the former are cramps, vomiting, purging, thirst, trembling and fainting. In the latter the effects are more tardy, the symptoms are the same but less marked. There is fever, diarrhoea, nausea, palpitation and great loss of flesh. These gradually disappear upon discontinuing the drug. The antidote is starch. Give in water and follow with emetic. Repeat if necessary.

IVY. Poisoning by ivy and other vines is noticed in another part of this class. See Index.

LEAD. Poisoning by lead also receives consideration elsewhere. See Index.

MERCURY. *Bichloride of Mercury* (Corrosive sublimate), Calomel, white or red precipitate, vermillion, turbpeth mineral. Symptoms, metallic taste, vomiting and purging of bloody matter, intense thirst, difficulty in speaking, breathing and urinating, convulsions, coma and death. Give promptly the white of eggs mixed in water or milk. Use the stomach pump or produce emesis by tickling the throat. Again fill the stomach with the egg and water or milk or even flour and water. The resulting inflammation may be treated as gastritis.

MUSHROOMS. If you are not familiar with the difference between the poisonous and non-poisonous mushroom, never gather those which grow in dark and damp places, or still better, dispense with them altogether. The poison is tardy in its action. There is pain in the stomach and bowels, vomiting, purging, stupor or delirium and convulsions. If vomiting has not occurred, give an emetic of flour of mustard and water, or table-salt and water, and follow with active cathartic. Apply hot packs to the abdomen to relieve pain.

OPIUM, MORPHINE, LAUDANUM, PAREGORIC, Godfrey's cordial, Soothing (?) syrup. In a half hour after taking this drug, drowsiness comes on followed by stupor. From this the patient may be roused but at once relapses. The pulse is small and irregular, the surface warm and flushed, pupils contracted, at a later period, dilated. Give emetics of sulphate of zinc and water. Sometimes the sensibility of the nerves of the stomach are so deadened that emetics will not act. Persevere, however, and by rousing the patient and irritating the throat you will be successful. These must be repeated until the stomach is cleansed of its contents. Then give strong coffee or a solution of tannin. The patient must be kept in continual motion. Take off the clothes and walk him in a warm room. If an adult, two stout men should perform this office. They must be relieved by others at the end of an hour, for in that length of time they will be completely exhausted, for the body has literally to be carried. At the same time he must be frequently aroused by smart blows with the palm of the hand or by flagellation or flapping the body with the corner of a wet towel. When all else fails, artificial respiration should be kept up for a considerable time. (See Index.) By these means the effects of the drug slowly wears off—the narcotism gradually disappears.

POTASH. See *Alkalies*, above.

POTASSIUM. The *cyanide of potassium* is used in the arts, particularly by photographers. When swallowed it produces all the symptoms of poisoning by

PRUSSIC ACID. See *Acids*, above.

PHOSPHORUS.—Children become poisoned by eating the ends of matches or phosphorus paste, used as a vermin and roach poison, and to kill rats. The symptoms are intense thirst, nausea, severe pain, and the odor of garlic in the breath and vomited matter. No antidote is known. Give calcined magnesia in milk, and afterwards emetics of mustard-flour and water.

SNAKE BITES. See Index.

STRYCHNINE. *Nux Vomica, St. Ignatius' Bean, Rat Poison.*—

The symptoms are restlessness, twitching of the muscles, convulsions with strong contractions, spine bent backwards and head thrown back and asphyxia.

TREATMENT.

With all possible dispatch give an emetic of twenty or thirty grains of sulphate of zinc (white vitriol). After this operates administer a strong solution of tannin or draughts of strong coffee. Control the convulsions by inhalations of chloroform, a teaspoonful poured upon a napkin and placed near the nostrils. Between the paroxysms give chloral dissolved in water. The patient should be allowed to go to sleep if so inclined; at all events kept perfectly quiet, for any shock to the surface brings on the convulsion.

TOBACCO.—The symptoms are faintness, giddiness, vomiting, great prostration, delirium, and convulsions sometimes. Administer stimulants, such as brandy, by the mouth or rectum, strong coffee and the spirit vapor-bath.

VERATRUM VIRIDE. American Hellebore.—In poisonous doses it produces nausea, persistent vomiting, copious perspiration, great prostration, coldness and pallid surface, slow and labored heart action, feeble pulse and stupor. In medicinal doses and combined with a stimulant like alcohol or the essential oils no unpleasant effects are produced.

TREATMENT.

It is useless to attempt to give any remedy by the mouth, for the stomach refuses everything, even a half teaspoonful of brandy. Stimulants are indicated, and when used should be thrown into the bowel. In three cases of poisoning, which came under my personal observation, I was supplied with stimulants, but did not use them. After the vomiting ceased, profound sleep for one or more hours followed. The persons awoke weak, it is true, but presenting no other untoward symptoms. In twenty-four hours all traces had disappeared.

ZINC. *Sulphate of Zinc* (white vitriol), *Chloride of Zinc* (Burnett's disinfectant).—Sulphate of zinc produces pain and violent vomiting

in large doses, but seldom death, as it is an emetic. Warm water may be freely given to assist emesis. The chloride is corrosive, and is accompanied with vomiting, pain and burning sensation in the throat and stomach. Give the white of eggs in water or milk. The inflammation following may be severe and perhaps fatal.

If the Exact Poison is
UNKNOWN,

It will be best to follow a general plan of treatment. We want an emetic, antidote and cathartic. For the first, tickling the throat with a feather or finger will generally succeed. In all cases, except poisoning by sulphuric acid, warm water may be freely given. This will either cause vomiting of itself or facilitate emesis by irritating the fauces or throat. For an antidote that will meet the great majority of poisons, give a mixture of equal parts of

R.—Calcined Magnesia,
Pulverized Charcoal and
Sesquioxide of Iron.

Mix.

The latter is made as described above, under the heading Arsenic. Castor oil is the best cathartic for general use in poisoning, and is found in all drug and country stores.

A LIST OF DISEASES classified as *Enthetic*, but considered under other headings.

PURULENT OPHTHALMIA, see Class III, Local Diseases, Order II, Diseases of the Eye.

GONORRHOEA and SYPHILIS, see Class IV, Gennetic Diseases, Order I, Of Men.

MALIGNANT PUSTULE, see Class V, Diseases of Bone, Muscle and Skin, Order II, Skin Diseases.

ORDER III. DIETIC DISEASES.**SCURVY—*Scorbutus*.**

Scurvy is an impoverished and altered condition of the blood resulting from defective food. We find it among sailors, soldiers and others who are at sea for long periods or are kept upon salt meats, impure water, etc., who are supplied with vegetables in limited quantities or are without them entirely. Fifty years ago it decimated the navies of England to an alarming extent. It is not so common now, chiefly from better hygienic regulations and the use of canned foods. The symptoms are black and blue or purplish spots upon the surface resembling bruises, loose teeth, spongy and bleeding gums, flabby tongue, pale face, fetid breath, dry skin and swollen joints. General debility is well marked and there is tendency to diarrhœa and dropsy.

TREATMENT.

This is simple and consists mainly in supplying deficiencies and in better hygienic regulations. The vegetable acids, such as vinegar and lemon-juice, are necessary, also green vegetables, fresh air, warmth in clothing and in climate, if possible, and cleanliness.

RICKETS—*Rachitis*.

Children of scrofulous parents suffer from this disease, or it may result from innutritious food, impure air and the want of hygienic surroundings. The first child is rarely rickety. The bones soften, readily curve and are unable to support the weight of the body or

even the contraction of the muscles, weak as they are. The head and upper part of the body sweats. The back is bent in the form of the letter *S*, the breast bone projects, the long bones are thin, but the ends are large, making the joints prominent. The head is narrow across the forehead, the "soft spot" does not close or harden and is depressed. The shoulder blades project upwards. Dentition is retarded; the child may be two years of age and have but two teeth. These often rot and fall out. The belly is uncommonly large and if the child stands upon its feet the bones of the legs become bent. This it seldom attempts to do and will remain where placed for hours. The bowels are irregular and the dejections fetid.

TREATMENT.

This consists principally in supplying proper nourishment and hygienic means such as air, sunlight and salt water baths. The great need is the phosphate of lime which hardens the bones and builds up the teeth and some easily assimilated fat like cod-liver oil. No better preparation can be employed than that recommended in the treatment of consumption which combines these substances in a palatable form. If the mother is debilitated by over-suckling it would be better to substitute a healthy nurse or give cow's milk. If it passes from the bowels undigested add pepsin. In this way a remarkable change will be effected in one or two months.

GOITRE—*Bronchocela*.

It is seldom that the throat-gland (thyroid) enlarges to such an extent as to interfere with respiration. If such a condition should arise it may then be wise to consider surgical means of relief, which involves its extirpation. So far the history of surgery presents but few instances of radical cure by this method. A plan of treatment that has been carried on for many years is to paint the neck with iodine, and administer internally the tincture of iron sometimes combined with iodine and sometimes not. A more successful method is the administration of an alterative syrup. The Queen's

Root Alternative answers the purpose. It is compounded as follows :

R.—Fluid ext. of Queen's root, ...	four ounces,
Fluid ext. of Poke Root, ...	two ounces,
Fluid ext. of Blue Flag, ...	two ounces,
Fluid ext. of Mandrake or Blood Root, . .	one ounce,
Simple Syrup, ...	twenty ounces.
	Mix.

Take a teaspoonful every three or four hours.

Conjointly with this make an application of strips of adhesive plaster, which produce a firm, immovable and unyielding pressure. The plaster should be removed as soon as the gland is diminished to such an extent as to be free from its influence, and another applied which will constrict as in the first instance. Another method which has advantages over this as a local treatment, is painting the skin all over the gland with a thick, heavy coating of collodion. This collodion membrane may be removed every twenty-four or forty-eight hours and the parts repainted. In all cases attention should be directed to improving the diet, the habits and other elements that tend to enervation. Comfrey, pokeroor and barberry make a good compound for internal use.

ALCOHOL-DISEASE—*Dipsomania*.

It is still a debatable question whether the insatiable thirst for intoxicating liquors is a *habit* or a *DISEASE*. It may be, and probably is, a habit at the outset, but a barkeeper once said that when he saw a young man come in before breakfast and *alone* he marked him as a "GONER." "Goners" are certainly numerous. Perhaps we look through doctors' spectacles, but we believe this madness for drink is a disease. The condition of the stomach and brain after death shows change of structure. The important question then arises, if it is a disease, is it amenable to treatment? The management of "inebriate asylums" consists principally of restraint. The

invalid pledges his word of honor not to leave the institution, and after a period of ten days, sometimes longer, during which he suffers mentally and physically from the loss of his accustomed stimulous, he is in tolerable health and will remain so. We admit that the appetite is not destroyed. That condition of the internal organs which has existed for years cannot be removed in a month, and the same may be said of all chronic disorders. The appetite may be hereditary, and it will take skilled supervision for months, in fact, until the WILL can be educated and strengthened sufficiently to master the passions.

In this connection we cannot forbear introducing an extract from an English health tract: "It always seemed to us almost a crime to give the pledge to a drunkard, who generally takes it in a paroxysm of self-reproach, without undertaking the stewardship of the unfortunate for some time after. Surely it cannot be expected—without one of those miraculous interventions it is presumptuous to hope for—that an habitual drunkard can all at once refrain from gratifying his maddening propensity, unless some substitute is given to supply its place. A few members of every Temperance Society should form themselves into a committee of supervision over such cases, teaching the family to be on the watch against the violent outbreak, the alarming depression, the insupportable craving almost certain to return. Nice, well-flavored tea or coffee, a cup of hot milk, broth, some better diet than usual, perhaps a glass of pure spring water, the morning ablution, certainly the Turkish bath, together with the use of a hot stomach-bandage, should be ordered and even *provided* if necessary. We have little sympathy with those temperance advocates who do not follow, at least in imagination, the jaded man or woman to their homes, realizing their wants, their struggles and their temptations. Ask any delicate person who has been fed with stimulants to abstain, and though such be surrounded with every luxury, the answer you will receive is: 'It is impossible.' Shall we, then, refuse the poor some aid in the accomplishment of what is often an act of the sublimest heroism?

It is not among the strong-willed, but among those infirm of purpose, the weak and vacillating, that we have chiefly to work. Let us not then overlook natural influences, if our object be, not that the pledge be *taken*, but that it should be *kept*."

Plans have been devised to destroy the appetite and with some degree of success. One is this : after a debauch or spree, put whisky into all the articles of food, upon the bread, cake, meat, etc., and into the tea, coffee or water. In about three days the person turns from liquor in disgust and will not touch it for a long time. Another plan we recently met in the *Medical Tribune*. It was introduced by Dr. R. D. Unger and is vouched for by several physicians who have tried it. At the time of this writing we have had no experience with it. One advantage strikes us : with the use of alcohol we have a good tonic. Men debauched for years—"used up," demented, loathsome—have been made well in ten days and imbued with a positive aversion for strong drink. The formula is

R.—Pulverized Cinchona Rubra, . . . twelve ounces.

Dilute Rectified Spirits, ... ten ounces.

Mix.

Macerate or let steep for fourteen days, then strain off and evaporate by gentle heat to eight ounces. Take one teaspoonful every three hours, moistening the lips with it occasionally, between times for one or two days. On the third day, the dose may be reduced to a half-teaspoonful and then to fifteen, ten and even five drops. Five to fifteen days and sometimes thirty will be sufficient time for a cure, seven being the average. . . . The unfortunate inebriates will be relieved from their degradation and misery, and will hail this as one of the most humane discoveries of the nineteenth century."

DELIRIUM TREMENS.—*Mania a potu*.

This is the temporary insanity of drunkards and others habitually using alcoholic or other narcotic stimulants in excess. It comes on gradually with nausea, vomiting, loss of appetite, sleeplessness and

great restlessness. It may result from sudden disuse of the accustomed beverage, from confinement. A marked feature of the malady is the mental delusion that the room or bed contains snakes, which are bent upon the destruction of the invalid. He is even suspicious of friends and thinks they will poison or rob him.

TREATMENT.

This consists of the use of capsicum (cayenne pepper) and hot water. Twenty or thirty grain doses of capsicum produce rest, sleep and consciousness. A single dose is sometimes all that is required. If there is a relapse repeat the dose. Recovery is generally assured if sleep can be secured. Hot water should be the only drink, as it is about the only thing that will remain upon the stomach. When the delirium has passed, restrict the diet for a few days to milk, oatmeal porridge, beef soup and the like. Each succeeding attack is more likely to prove fatal.

OPIMUM-EATING HABIT.

The sudden and complete suspension of the habit is infinitely more efficient and easier to the patient than the gradual diminution of the dose. This latter plan is generally practised and in some cases works well ; but let the invalid suspect the trick and it is next to an impossibility to effect a cure or even continue the treatment. The administration of large doses of phosphoric acid and lupulin and the frequent use of the Turkish bath materially help the system in overcoming the effects of the immediate suspension of the drug and in checking the craving for a future supply. Strychnia, iron and quinine in full doses, also assist powerfully at a later period to restore the impaired health and strength of the patient. Experience has proved what judgment would suggest, that the sudden suspension of the drug is less trying to the physical and moral powers than a gradual diminution of the quantity ; because, after each dose, however small, the same reaction takes place, the physical and mental craving remains the same, the temptations to an occasional increase

are so many and the trial is so protracted and exhausting, that very few have the courage to persevere.

The indiscriminate administration of opium and morphine for the relief of pain, places much of the blame for this habit upon physicians' shoulders.

ORDER IV.—PARASITIC DISEASES.

WORMS.—*Vermes Intestini.*

There are in this country four kinds of worms that infest the alimentary canal. First: The *ascaris lumbricoides* or long round-worm, closely resembling the common earth worm in shape, tapering at both ends, from four to eighteen inches in length, and white or pinkish in color. It inhabits principally the small intestines but sometimes ascends to the stomach (some people call them *stomach worms*) from which it is ejected by vomiting. Sometimes it creeps out of the mouth or nostrils and occasionally travels to the rectum and passes away with the excrement. A large quantity of mucus seems necessary to its existence. In fact we are inclined to believe that worms in the body, like their relatives outside, subsist and flourish best in materials in a process of decay or putrefaction. Hence we look upon their presence as a sign of indigestion, fermentation or some other deficiency in the functions of the stomach or bowels. Once in possession they must be expelled, for no improvement in diet or general health will destroy them.

Second: The *Ascaris Vermicularis* or pin-worm. It is from one-quarter to one-half an inch in length and about the size of a small sewing-thread. It inhabits the rectum mainly, but is found anywhere in the intestines. It is met in great numbers, producing great irritation of the anus, particularly at night.

Third: The *Tricocephalus* or long thread-worm. This is like the former variety, except being three or four inches in length and enlarged at its posterior extremity.

Fourth : The *Tenia Solium* or tape-worm. It is of a flat ribbon-like shape of from one-quarter to one-half an inch in width at the largest place, tapering down to a mere thread. It has a head and is made up of numerous joints and is from five to fifty feet in length. It is seldom that more than one worm exists in the same individual at the same time. It inhabits the small intestines.

The round worm and pin worm are most frequently found, particularly in children. Adults, however, do not escape, and many unpleasant feelings might be spared if they would occasionally direct their attention to the matter as a possible cause. We are not of the class who believe that everybody has worms, nor of the opposite school who believes nobody has them, or if present, they amount to nothing. In the treatment of chronic diseases we should be less successful if we entirely overlooked invagination. We could cite many cases, but one must suffice. A lady had dyspepsia for many years and no remedy seemed to benefit. We diagnosed lumbricoides but were surprised to learn that no *visible* effects followed the medication. A closer investigation only more strongly confirmed our opinions, and after a week's rest we gave an emetic with the result of dislodging three of the "oldest inhabitants." Their size and vitality astonished us. After a day's fasting we gave the chloroform and lavender mixture mentioned in several places in this work, and while the "happy family" rested in gentle slumbers cathartics carried them away and with them all symptoms of dyspepsia. Ten years ago a gentleman after ten weeks of *typhoid fever*, with professional attention and several consultations, was given up to die. A lobelia emetic broke up the fever (?) and the nest of parasites and he is living to-day.

The *symptoms* are mainly those of irritation of the stomach and bowels ; variable appetite, sometimes voracious, fetid breath, acid eructations and pains in the stomach ; grinding the teeth during sleep, picking the nose ; hardness and fullness of the abdomen, slimy stools with griping pains, short dry cough and emaciation. In children this irritation produces a feverish state and is popularly termed "worm fever." To these may be added a puffy or

bloated appearance of the face and a peculiar expression of the eyes. Under these circumstances the passages should be watched, and if worms or segments or joints are passed we are positive of the diagnosis. Otherwise we are not, for most of these symptoms attend the diseases we have mentioned. A physic will sooner settle the matter if there is no objection to its use.

TREATMENT.

Being certain of the presence of worms and knowing the kind, their expulsion is not difficult. The fever or irritation in children is first to be treated by small doses of aconite or gelseminum. before using a vermifuge. In the case of the long round worm or stomach worm, if they are accustomed to rise in the mouth or nose when sleeping, or to tickle the throat when laying down an emetic should begin the treatment. We prefer the sulphate of zinc in doses from ten to twenty grains in a cup of warm water. Salt and warm water will drive them from the throat, but it is not so good as an emetic. After the emetic, or without it, if objection is made,

R.—Podophyllin,		ten grains,
Santonine,		one dram,
Pulverized Sugar,		one ounce.

Mix.

Give five or ten grains every three hours.

It requires no menstruum to disguise it as it is almost tasteless. After three days medication give a teaspoonful of calcined magnesia and in an hour a glass of lemonade. In a few days begin the use of the santonine, follow for three days and repeat the physic. This plan should be continued for ten or fifteen days at least. Only in this way can they be effectually destroyed and expelled. To guard against a second generation go through the same routine after the lapse of a month. Santonine is the most pleasant and effective remedy for the long round worm. It is the active ingredient of some worm lozenges; if we thought a lozenge did not contain it or was made of other drugs we would not use it—better make your own.

The same treatment will destroy the long thread worm.

The pin worm we manage in a different way. It inhabits the lower bowel and may be reached by injections. It migrates from one to another between the warm sheets, and when discovered in a child the bed-fellows, whether young or old, should receive the same treatment at the same time. This consists of injections of carbolic acid, ten to twenty drops, and warm water a pint, two or three times each day, particularly before retiring. The anus should be kept well oiled with lard or the antiseptic ointment. The importance of this will be better appreciated when it is understood that they seek the anus for propagation. By this means they are unable to deposit their eggs. Sheets and night clothes should be boiled daily. Give the calcined magnesia every night. This plan followed for three or four days will completely rid the patient of this pest and its intolerable itching and irritation.

The tape worm is a more formidable adversary. The head is supplied with hooks and suckers and this we must have : portions or segments give no idea of the size of the animal, and their loss has little effect upon its life or the distress caused the patient. The segments grow from the head and push the others before them. A few inches may be lost every day for years, and yet a very long worm be expelled. The stomach and bowels must be prepared for the operation either by fasting for twenty-four hours or by a physic at bed time and another upon rising. The remedy may then be prepared. The profession advise pomegranite, male fern, pumpkin seeds and kousso. Either one of them is good and if used properly will bring away the parasite. There is one difficulty, but this is easily met. We refer to the fact that the remedy is a fluid or given in fluid form, and may be absorbed before reaching and effecting the tinea. Hence always combine it with an active cathartic, such as the fluid extract of jalap in dram doses or croton oil in two drop doses. The simplest remedy is pumpkin seeds. Take off the hulls from a pint, pulverize and make into a mush with warm water. Salt to taste. Divide, add the cathartic and take one-half two hours

after the other. Male fern can be had in the form of oil. Dose a dram every two hours in hot milk, adding cathartic to each. A decoction of the pomegranate root is used in teacupful doses every two hours. It is disagreeable, but so is the parasite with which you contend. Other remedies might be mentioned, but we think we have pointed out relief for all.

We want to say a few words upon another parasitical animal which makes a host of us, if we extend the invitation to "walk into the parlor." We introduce it as the

PORK OR SAUSAGE POISON.—*Trichinosis*.

No definite estimate can be formed of the frequency of this disease. So closely does it resemble other diseases and so seldom do physicians employ the microscope, if they possess one at all, that it easily escapes detection. An examination of the meat in an extensive slaughtering establishment found one specimen in every twenty five diseased. But millions of hogs are killed and packed yearly and we believe there is little cause for alarm. The high temperature reached in cooking destroys the germ: the sufferers have eaten the meat raw in the form of sausage or smoked ham.

Upon microscopical examination of the meat worms only one-thirtieth of an inch in length will be found scattered through it. This is the *Trichina Spiralis*, meaning curled hair, because it is coiled up in a cyst or sack. Upon entering the human stomach these sacks are digested off and the parasites set free. They fasten upon the walls of the intestines and begin breeding. If the irritation is great and the diarrhoea proportionate the chances of recovery are more favorable. At the end of the second week the young appear in countless numbers and begin at once to burrow through the intestines and seek the voluntary muscles where they locate. The critical period with the afflicted is from the end of the first week when irritation begins to the end of the second week before reproduction occurs.

The symptoms are not unlike those of typhoid fever or rheumatism:

nausea, loss of appetite, debility, soreness and stiffness of the muscle and pain increased by pressure, perspiration, tenderness over the abdomen, diarrhoea. Later the muscular pains increase, the stools become bloody and have a peculiar odor, the power of swallowing, of speech and of breathing is lost.

It does not require a very high power of the microscope to discover trichinæ either in the hog or in the muscles upon post-mortem examination. Great care, however, must be used in preparing the specimens. The section must be longitudinal and as thin as can be : treat with acetic acid to take out the coloring matter, wash thoroughly in pure water and mount in glycerine and water.

TREATMENT.

No direct medication has yet been discovered. When several members of a family are suddenly attacked with diarrhoea, if raw pork has been eaten this disease may be suspected. A microscopist will discover the parasite in the dejections and in the meat, if a specimen can be supplied. The diarrhoea should not be checked but in every way encouraged by free and copious draughts of mucilaginous and carbolized fluids and cathartics. This is the only relief the profession can offer and this is of little avail after the end of the second week of their introduction. Upon the *prevention* of the malady we have more positive knowledge. The temperature of boiling water (212° F.) destroys the entozoa. The application is evident—*always cook pork that is to be eaten.*

A LIST OF DISEASES classified as *Parasitic* but considered under other headings.

ITCH and PORRIGO, in Class V, Diseases of Bone, Muscle and Skin, Order II, Skin Diseases.

THRUSH (Aptha), see page 407.

CLASS II. CONSTITUTIONAL DISEASES.

ORDER I. DIATHETIC DISEASES.

RHEUMATISM, ACUTE OR INFLAMMATORY.

The disease is due to the presence of lactic acid in the blood. All secretions and excretions, even to the perspiration, give an acid reaction. The fever is high and the pain in some instances considerable. The larger joints, notably the knees, ankles and wrists are more frequently attacked. One joint only is involved at a time and the characteristic of the disease is that without premonition it may in a few hours centre upon another, leaving the first comparatively free. The joint attacked becomes red, hot, swollen, tender, and the least motion aggravates the pain. In some cases this sensitiveness is so great that touching the bed-clothes or walking across the floor will jar sufficiently to disturb the invalid. Pain is continually depicted upon the countenance. The invalid is restless, sleepless and thirsty, has a high fever, thickly coated tongue and deficient action of the kidneys and of the skin. Occasionally there will be free perspiration having the characteristic sour odor. A peculiarity of inflammatory rheumatism is that it expends its force upon the fibrous tissue. Sometimes the elbows, hips or shoulders are invaded. In this peculiarity lies its danger. The walls and the valves of the heart are fibrous. A change from a joint to this organ hazards life, while the heart being free

from attack, there is little if any danger. In acute *gonorrhoeal rheumatism* but one joint is invaded and the inflammation continues thus circumscribed until recovery.

It is distinguished from dropsy in the joint by the latter resulting from an injury, having little swelling, never changing to other joints and by fluctuation of the contained fluid. Milk-leg occurs only after confinement, generally attacks but one leg, which becomes white, with tense corded veins, and the swelling involves the whole leg. Gout attacks the smaller joints, principally the great toe and seldom moves its location; both redness and pain are greater in gout than in rheumatism.

The indications are to remove, as far as possible, the acid from the system; chemically neutralize that which remains; to stop the fever and relieve pain in the joints.

TREATMENT.

For the first, mix cream of tartar, two drams and podophyllin two grains. Mix thoroughly and make four powders. Take one in molasses every two hours till they operate. After the operation is somewhat subsided, place the patient between woollen blankets. Flannel underclothes are advantageous. The alcoholic vapor bath by means of hot bricks or by the rubber bag should be used and continued without intermission for a day or two. The body may be bathed *under the bedclothes* with soap and hot water. Soap is an antacid. To keep up chemical action and to quench thirst, put a teaspoonful of cream of tartar and of sugar in a glass of water and administer as a common drink. This acts gently upon the kidneys and bowels. Veratrum may be given in three or four drop doses every four hours. As a simple local application, flannels wrung out of hot water combined with soda or saleratus, may be wrapped around the painful joint. Or a liniment composed of

R.—Tincture of Aconite root,
Tincture of Arnica flowers, and
Laudanum, ... in equal parts,

May be poured upon a strip of flannel and bound around the joint. Too much reliance should not be placed upon local treatment, as it is palliative rather than curative.

A prescription of great value, and we believe to be indispensable, which acts upon the eliminative organs and seems to possess a specific antagonism to lactic acid formation, is as follows:

R.—Spirits of Nitre, ... three drams,
Acetate of Potash, ... two drams,
Tinct. Colchicum seeds, . . four drams,
Water, ... three ounces,
Essence of Wintergreen, . . one dram.

Mix.

Give a teaspoonful every two or three hours.

Morphine or opium may be given at night to secure sleep. In rare and tedious cases it may be necessary to repeat the podophyllin.

CHRONIC RHEUMATISM.

This disease appears in many forms. It may come on suddenly and be as speedily removed, may follow an acute attack of rheumatic fever or may slowly develop and last for years. The principal symptoms are pain, stiffness or difficulty of motion, soreness and perhaps dropsy. It differs from the acute form by not being attended with fever, by little if any redness or swelling and by being confined usually to a single part. Like all rheumatisms, it attacks the fibrous tissue. This we find in the joints and sheaths or envelopes of the muscles, the sheaths of the nerves, the ends of the muscles by means of which a firm attachment is made to the bones, and in the valves of the heart. Occasionally the muscle or muscles are contracted, sometimes permanently. When the nerve sheaths are involved the symptoms are neuralgic. It more frequently afflicts the aged.

It may settle in a part; LUMBAGO is chronic rheumatism of the back. Men working in a stooping position which separates the

pants and vest over the spine, becoming overheated and exposed to a draught of cold air, are liable to lumbago. The back becomes stiff ; there is sharp pain on rising or walking ; it is only with great difficulty that the person can assume an erect position. Rheumatism of the broad muscle covering the forehead and crown of the head is often mistaken for headache. When seated in the muscles of the neck, compelling the head to be held at one side and towards the side affected, it is termed TORTICOLLIS or WRYNECK. The eye and its muscles are sometimes assailed. The muscles covering the abdomen, the muscles covering the chest or the muscles of the forearm and shoulder may be affected. The uterus is its favorite seat and it may be well to notice this fact before commencing treatment. One of the most painful locations is the hip joint and sciatic nerve. SCIATICA is a disease so deeply seated, combines so closely the symptoms of neuralgia and rheumatism, that it is quite difficult to reach and relieve it speedily. Another favorite seat is the valves of the heart. This is most dangerous because it involves and interferes with the circulation. Because the closure of these valves is not complete, the blood often regurgitates or flows backward. It is on account of the liability of rheumatism to change in location from some part to the heart and the consequent tendency of the disease to shorten life, that life insurance companies almost invariably refuse to take risks upon persons who have suffered from acute rheumatism, or who have for several years before the application, been troubled with the disease in its chronic form.

The indications are to correct the acidity of the fluids, and by arousing the skin, liver and kidneys, accomplish its elimination ; to relieve pain, and if necessary change the occupation and improve the diet.

TREATMENT.

The first indications are met by the use of the Turkish bath, frequent bathing in water saturated with soda, or the soap and water sponge bath. So much for the skin. The antibilious pill and the spirits of nitre compound just given, will secure activity of the liver

and kidneys. A simpler, and we deem it as effective, a preparation, is the use of composition tea (Beach's), given warm upon retiring and taken cool once or twice in the mornings. An effective prescription and quite pleasant, is

R.—Simple Syrup, . . . four and one-half ounces,
 Tinct. Colchicum Seeds, one ounce,
 Tinct. Guaiac, . . . one ounce,
 Tinct. Opium, . . . one dram,
 Essence Wintergreen, two drams.
Mix.

Take a teaspoonful night and morning. If it moves the bowels too freely, either add a little more opium or diminish the dose. Thoroughly rubbing the part with antiseptic ointment will relieve pain and scatter inflammation. This is also the proper method for overcoming stiffness of the joints and contraction of the muscles. In deep-seated pains and those of a neuralgic character the aconite and arnica liniment may be employed, or the hartshorn liniment. In the severe form of sciatica, morphine should be given either by the mouth or by hypodermic injection. In addition, may be passed into the bowel a mixture composed of

R.—Turpentine Oil, . . . half an ounce,
 Castor Oil, . . . half an ounce,
 Mucilage of Gum Arabic, . . half an ounce,
 Camphor water, . . . one ounce.

Mix.

Administer every morning until relieved.

These injections may irritate the bladder, but it will only be for a short time. The effect upon the many and large nerves leading toward the hip joint is so beneficial that this trifling disturbance can be overlooked.

Thick flannels may be worn next the skin continually both summer and winter. On becoming accustomed to their use it will be found that they are not only comfortable in winter, but not so burdensome and oppressive in summer as will be anticipated. The

patient should assure himself that the walls and floor of the bedroom are *dry*, and he should sleep between woollen blankets. The diet should be generous and with as little as possible of the common flour bread and other articles composed chiefly of starch.

Recovery to a condition marked by absence of pain and local discomfort, should be followed by the occasional use of the Turkish bath and the employment of some tonic such as the Queen's root pill or syrup.

GOUT—*Arthritis, Podagra.*

This constitutional condition may be hereditary or produced and acquired by want of exercise, and by what is known as high living, the use and abuse of strong wines, malt liquors and rich foods. The premonitory symptoms are indigestion, or, more properly, an acid dyspepsia with flatulence, constipation, scanty urine and palpitation of the heart, all of which are lessened by a fit of gout. The fit consists of swellings of some one of the small joints which suddenly becomes very tender and painful with a red and shining skin. It locates in the large toe chiefly, but may attack any of the toes, the fingers, wrists or ankles. The local difficulty lasts some three or four days and then subsides to reappear after an uncertain interval. Sometimes it is "driven in" by cold and attacks one of the larger organs of the system. There is a deficient oxydation of the blood, impaired action of the kidneys, the blood is saturated with uric acid and not unfrequently urate of soda is found on the surface.

It is distinguished from rheumatism (in their acute forms) by gout assailing the small joints, rheumatism the large; by uric acid in the former and lithic acid in the latter; in the former the joint is more painful, is oftener affected and sooner passes away; in the latter the joint is less painful, the attacks are less frequent and last longer; gout may produce palpitation of the heart; rheumatism engenders inflammation. In gout, the stomach is disturbed; in rheumatism, hardly ever. Differentiating the chronic forms is not so easy and

much must be gained from the history of the case. Sometimes, but rarely in this country, we have the two combined—a rheumatic-gout.

TREATMENT.

The foot may be treated to a bath of hot water, to which is added common soda or mustard. If this does not quiet the pain procure

℞.—Tincture of Aconite root,
Tincture of Arnica flowers,
Laudanum, . . . in equal parts. Mix.

Use as a lotion, either bathing the joint or bandage with flannel and keep it wet. To neutralize the acid give teaspoonful doses of calcined magnesia every four hours, regulating the frequency by the strength and the movements. A most efficient means for its ejection is the Turkish or spirit vapor bath; this we consider indispensable. To affect the kidneys, take

℞.—Spirits of Nitre, ... three drams,
Tincture of Colchicum Seeds, . . . four drams,
Acetate of Potash, ... two drams,
Essence of Wintergreen, ... one dram,
Water, ... three ounces.

Mix.

Dose, a teaspoonful every two hours. Tonics should be employed after the acute symptoms have abated. The diet should be good and nutritious, but not rich and stimulating. Flannels should be worn and woolen stockings. If the feet are cold when going to bed use the rubber bag. Dusting a very little red pepper upon the inside of the sole of the stocking will keep the feet comfortable during the day if exercise is taken, and exercise is important to recovery.

BLOODLESSNESS.—*Anæmia.*

In this disease there is a deficiency of blood or a poverty of the red corpuscles of the blood which gives it color. It may result from

exhaustive diarrhœa, dysentery, hemorrhages of any kind, from debilitating fevers and diseases or from starvation. The pulse is rapid and feeble, appetite poor, with fainting, dropsies and usually amenorrhœa. The striking symptom is the pale and waxy appearance of the skin and mucous membranes.

Leucocythæmia is a name given by physicians to a species of anæmia in which the white blood corpuscles predominate the same as in the cold-blooded animals. The general appearances are the same as in anæmia and progressive emaciation is the general result. An exact knowledge of the presence of this disease can only be obtained by the microscope. In most cases the spleen is affected. It is sometimes called "pernicious anæmia."

Addison's disease is another affection belonging to this group. The bloodlessness is well marked, and the languor, debility and progressive emaciation also. The peculiarity is that instead of a waxy appearance, the skin has a sallow, yellowish or bronzed tint. The capsule of the kidney is diseased.

TREATMENT.

Hygienic means are of the utmost importance ; fresh air, proper exercise, nutritious food with baths and friction. Iron in some form seems to be demanded by the poverty of red corpuscles, but this must be given in a form that is easily assimilated and that taxes the vitality the least. The bowels should be regulated by mild aperients and every means employed to invigorate the system and preserve and augment the vitality.

GREEN SICKNESS.—*Chlorosis*.

This is an anæmic condition of young girls who have not menstruated or by whom this function is imperfectly performed. The common name is given on account of the pale greenish-yellowish cast of the skin. They are easily fatigued, are averse to labor or exercise, prefer solitude, are cheerless and suffer from perversion and loss of appetite, impaired digestion and waste in flesh. Headache, constipation, foul breath and palpitation may attend.

TREATMENT.

In this disease as in the one just described there is a very marked deficiency of iron in the blood. The advice there given is equally applicable here. We would further suggest that in addition to the administration of iron a uterine tonic may be given, and we know of none better than the Matrikonine. (See Uterine Diseases.)

DROPSY.

Dropsy is an accumulation of serum in the cellular tissues of the body or in some of its cavities. It is general or external, and local or limited to a single cavity. In general dropsy we notice an increase in the size of the part, without pain, redness or inflammation, the skin usually pale, stretched and shining, and upon pressure by the end of the finger, unevenness of surface remains for some time, disappearing only when the fluid has returned and again infiltrated the tissue. This anasarca or general dropsy is particularly apparent in the bloating of the face, the tissue under the eyes and in the hands and feet. The local infiltration technically known as *oedema* is principally exhibited in the feet and, as the causative disease progresses, advances up the limbs.

Local dropsies occur in almost all of the sacs of the body. There is *hydro-thorax* or dropsy of the chest, such as false pleurisy; there is dropsy of the heart; *hydrocephalus*, or dropsy of the brain accompanying inflammation of that organ, spotted fever, etc.; *hydrocele*, or dropsy of the testicle; ovarian dropsy; *ascites* or dropsy of the abdomen, etc.

The appearance of general dropsy is but an index of disease and not a disease in itself. For the cause we must look to either the kidneys, the liver, or blood-vessels. When from any cause, as disease of the kidneys or severe cold in which the skin is principally involved, excretion is interfered with and the fluids are retained, they find their way by force of gravity to the ankles. When disease of the liver is present, or there is pressure upon some of the larger veins, then from interference with the circulation serum accumulates in the lower

limbs. With disease of the heart, there is imperfect circulation, and the same result may follow. A vitiated condition of the blood is one of the most frequent causes of dropsy. Several of these causes may be at work at the same time, as in scarlet fever, where the blood is deteriorated, the heart enfeebled and the blood-vessels impaired. Again, dropsy may come on suddenly and it be impossible to attribute it to any definite cause. This latter yields readily to proper treatment and is seldom fatal.

HYDROCEPHALUS, or dropsy of the brain, occurs in children. The head increases greatly in size, with gradual loss of the mental faculties, senses of smell, hearing, seeing, etc., and finally of motion. Following these are epilepsy and palsy and possibly idiocy. Cardiac dropsy can only be detected by the physician. It usually follows an acute attack of inflammation of the heart and cannot be confounded with another disease which develops only gradually.

The most frequent local dropsy is that of the abdomen. Whatever the cause may be, we find the head and neck presenting signs of emaciation while the belly becomes more prominent. After a while it is noticed that this prominence partly disappears upon assuming the recumbent position; also that it sags on the side on which the party reclines. Holding the hand against the surface on one side and striking the other with the end of a finger, a wavy impulse is given which is distinctly recognized by the applied hand. These percussion strokes upon any part of the abdomen below the surface of the contained fluid give a dull sound, while, on the contrary, if the bloating is due to confined gas, the sound is light and tympanitic.

Abdominal dropsy is distinguished from confined gas in the manner just described; besides, in the latter, there is no fluctuation; in ovarian dropsy the dullness on percussion may be confined to the side involved and a tympanitic sound be heard on the other; also the prominence is rather in front and not at the sides; from pregnancy, by the many physical signs attending the enlarging uterus, by the absence of fluctuation, by "quickening," and, if the stethoscope is employed, the sounds of the foetal heart; from distension of the

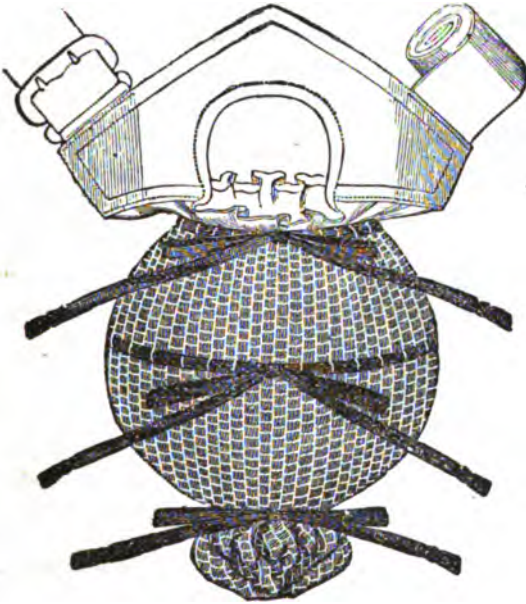
bladder, by tenderness upon pressure just above the pubic bone and by the fact that urine has been voided.

HYDROCELE, or dropsy of the testicle is accumulation of fluid in the tunic or membrane enclosing the testicle. It is a common malady, may be present at birth, or occur any time during life and attacks but one side. The swelling is first noticed at the lower part of the scrotum to which the water falls by force of gravity. The enlargement is from below, upwards. In hernia, on the contrary, the swelling begins above and progresses downwards. The skin is affected but little by the dropsy, although the tunic may contain as much as a pint of this colorless accumulation. It is translucent like an egg. Holding a light behind the scrotum in a dark room and looking through from the front will convince one that it contains no solid in its lower portion. When the tunic fills with blood instead of water, as from injury, it is known as *Hæmatocele*.

Hydrocele is distinguished from cancer by the absence of excessive weight and great pain, also by the manner in which the swelling occurs. From general dropsy by its pendency at first, the latter having a more even distribution over the surface. A dropsy involving both testicle and cord may be differentiated by placing the patient upon his back and raising the hips, when the fluid will escape into the abdomen, returning upon his assuming the erect posture.

Surgeons are in the habit of emptying the sac by puncturing it in its lower portion and allowing the water to escape. The testicle is then strapped to the pubic surface by adhesive strips and the patient kept in bed a week. Only in advanced stages, or in old chronic cases is this necessary. In all inflammatory conditions of this organ, support should be given by means of the suspensory bandage. This relieves pain and keeps the unusual weight from dragging upon the spermatic cord. When dropsy is suspected an elastic rubber bag lined with cotton may be sprung over the scrotum; thereby promoting absorption of the fluid. As this is difficult of adjustment and occasions uneasiness, we prefer and advise a knitted scrotal supporter

provided with adjustable tapes which admit of increasing the tension as the wearer is able to bear it.



SUSPENSORY for Hydrocele and various diseases of the scrotum and testicles, with laces for gradual compression.

HYDROTHORAX is an effusion accompanying pleurisy and will be considered at length under that head. As in abdominal dropsy, when the accumulation is extensive the surgeon is called upon to remove the fluid by puncturing the skin, or as the process is more generally called, by tapping.

TREATMENT OF GENERAL DROPSY.

The indications in treatment are to remove the cause, either the condition of the blood or organic disease or both; to rid the system

of the superabundance of fluid. In respect to the conditions developing dropsy, the proper treatment will be presented when these conditions and diseases are separately considered.

To remove the fluid we know no better means than the administration of a decoction or tea made with queen-of-the-meadow root in the proportion of one ounce, steeped in one pint of water. This quantity should be taken daily and may be divided to please the invalid. Or

R.—Spirits of Nitre, ...	three drams,
Acetate of Potash, ...	two drams,
Tr. Colchicum seeds, ...	four drams,
Water, ...	three ounces,
Essence Wintergreen, ...	one dram.

Mix.

These are excellent diuretics, but to be effective and arouse the kidneys they must be absorbed. Where this process is defective the use of a hydrogogue cathartic is necessary to compel activity of the liver; causing watery stools, it also assists in removing the fluid. One-tenth of a grain of the resinoid of mandrake (podophyllin) thoroughly triturated in one or two grains of sugar, magnesia or sugar of milk, may be taken every four hours, until free and thorough operation is produced. The Turkish bath or alcoholic sweat may be employed in the earlier stages and should be followed with thorough rubbing of the whole surface.

As most dropsies depend upon watery blood, feeble blood-vessels and flabby heart, no treatment will be successful unless accompanied with the best tonics. The continual effort to remove the accumulations may have the very opposite effect, brought about principally by the use of remedies, good in themselves, but debilitating when administered too frequently or too freely.

To obviate this untoward result, as soon as the kidneys are operating well and the increased flow of urine is perceptible, the diuretic may be suspended for two or three days. The administration of an astringent will hasten the cure. Prescribe

R.—Tannin, ... four drams,
 Port Wine, ... six ounces.
Mix.

Give a tablespoonful every hour.

A mixture like the following is of value:

R.—Sulphate of Magnesia, . . . four drams,
 Sulphate of Iron, ... eight grains,
 Sulphate of Quinia, ... twelve grains.
 Dilute Sulphuric acid, . . . one and one-half drams.
Mix and add
 Fluid ext. Ginger, ... two drams,
 Simple Syrup, ... one ounce,
 Water, ... eight ounces.
Mix.

Take two tablespoonfuls night and morning.

This is both palatable and effective.

CANCER.—*Carcinoma.*

This is one of the most distressing maladies with which the human family is afflicted. No part of the body, flesh or bone, seems to possess immunity from its ravages. It occurs most frequently in the breast and womb of the female, and in the lip, stomach and testicle of the male. The causes are unknown. Prolonged irritation or wounds are thought to influence their inception, but such seems hardly probable, for innumerable are the irritations and injuries that have no such termination. That tomatoes have in any way the power of producing cancer is simply ridiculous and we would not mention it but for the fact that in certain localities such a notion is becoming popular. There is no foundation in fact for such an opinion.

Cancers usually begin in lumps or hard tumors. They extend more or less rapidly in every direction, destroying or rather appropriating the flesh as they proceed and finally open in the form of ulcers, discharging an irritating and very offensive matter. They

destroy life by emaciation, hemorrhage or destruction of vital organs. Dr. Howe in a communication to a medical journal vividly portrays the constitutional effects, thus: "A patient affected with cancer loses the glow and hue of robustitude and takes on a pinched, yellowish and sodden aspect. The nails show incurvation, as in phthisis; the superficial veins on the front aspect of the wrist appear to convey blood the color of reddish wine; the flesh wastes; chills and night sweats are experienced; fever and restlessness come on; the strength diminishes; pain is felt in the local development; faulty nutrition and anæmia become strikingly apparent; and the presence of a fatal disease cannot fail to be recognized."

Cancers are named from some peculiarity, as Scirrhus, hard; Encephaloid, brain-like; Colloid, glue-like; Lupus, wolf; Hæmatodes, bloody; Noli me tangere, touch me not, etc. Their nature may be recognized without much difficulty when they have commenced to ulcerate, the fetor is characteristic and exceedingly offensive; the surface is irregular, the color light and the edges turned out. Their liability to bleed is another symptom by which to distinguish them from the non-malignant *ulcers*. The differential diagnosis while in the form of tumors is less certain and satisfactory. For example, we will review one of the most common forms of the disease—cancer of the breast.

THE CANCER

Attacks after the functional activity of the gland has ceased, after forty years of age, but may be earlier in single women.

Begins at a *point* and rapidly develops.

Becomes *fixed* to the parts beneath and is *immovable*.

Invariably causes retraction of the nipple.

OTHER TUMORS

Attack *during* the functional activity.

Often appear as *multiple* tumors in one or *both* breasts.

Are almost always *movable*.

Sometimes cause retraction of the nipple.

THE CANCER

Always eats away and penetrates.

Soon involves the skin and ulcerates; the edges of the opening appearing thickened, hardened and everted.

Has a *bloody* and *scanty* discharge.

Is accompanied with *neuralgic pains down the side and arm.*

The *glands* in the *arm-pit swell and inflame.*

Terminates within three years.

OTHER TUMORS

Seldom involve the gland to any great extent.

Rupture the skin by *over-distention* and then only at a *late* period of the disease.

Have *viscid* and *abundant* or *watery* and *purulent* discharge.

Have *no* neuralgic pains in side and arm.

Rarely involve the glands in the arm-pit.

May develop for years, causing local distress only.

We have followed the comparison to its completion. In cancer of the womb there is throbbing in this organ, pains in the back and groin and running down the thighs, frequent losses of blood and irritative fetid discharges.

In all forms of this malady there is pain, dull and aching at first, and only occasional; later, sharp and darting like the thrust of a needle and in the last stages, severe and continuous.

Soft cancers are more malignant than the scirrhus variety. The latter seem to derive nourishment from the tissues, the former from the blood. The blood-vessels in their vicinity are very large and well marked and hemorrhage, when it does occur, is profuse, exhaustive or fatal. Their average duration is but half that of the dense carcinoma.

Surface cancers (lupus), locate upon the cheek, lip, nose, back or shoulders. Commencing in either of the various forms of wart, pimple, blister, scabbed sore, or miniature tumor, in course of time the malignant ulcer appears. The sore is painful, fiery-red, with hard purplish margin and the offensive discharge. It spreads in all directions, limiting its ravages to the surface only. The danger of annoy-

ing or disturbing the "wolf" in its incipency, is aptly expressed in its other name, "touch me not."

The deep-seated cancers which reach the surface seem not to be so much dreaded by the physician as the secondary conditions which follow interference with the local tumor or the absorption of its poison-cells into the circulation of blood. The lungs or liver are then likely to be involved. Fortunately for the sufferers this does not invariably occur. The removal of the hard tumor or the open ulcer in its first stages with any swollen glands, will militate against such a result.

TREATMENT.

That "cancer is incurable," has passed into an axiom. The assurance with which quacks and pretenders claim to cure this terrible malady is remarkable. We do not recall a disease in which the advice of a well-educated regular physician and surgeon is of more importance. In some instances the cancerous mass may be removed and the attendant ulcer healed, but the systemic recuperation associated with real recovery falls short. It breaks out in new places and leaves the victim to perish with deep-seated disturbances. The difficulty lies in the fact that the morbid growth is not enclosed in a capsule like a tumor or abscess but infiltrates through the flesh and is partly taken up by the absorbent vessels so that the extinguishment of the local manifestation is wanting in completeness. As bad as this may appear the removal is often followed by years of apparent immunity from disease and tolerably fair health; besides the absence of pain and sleeplessness which tells so upon the vitality, is an advantage. The dread of the surgeon's knife seems to be innate. With a better knowledge of the value of anæsthesia by chloroform or ether, this feeling will become modified or disappear altogether. A tumor of rapid growth or one suspected of being cancerous, should be taken away.

For the open cancer, perhaps the best treatment is by caustics locally and the administration of powerful tonics and anti-scorfulous remedies. The "cancer doctors" confine themselves to topical ap-

plications, which are supposed to be "secret." Occasionally they come to light and the "purely vegetable" mess is found to contain arsenic or to consist of drugs recommended in medical literature. One of these has been furnished by Dr. Ford.

R.—Gum Tragacanth, ...	one dram,
Gum Opium, ...	two drams,
Peroxide of Iron, ...	three drams,
Pulverized Arsenious Acid, . . .	thirty grains.

Mix, using sufficient water to form a paste, spread on leather and apply.

The ingredients are incompatible. If the system is not poisoned by the arsenic, the cancer may give way and heal, but the constitution is still tainted. The symptoms of poisoning are puffiness of the eyelids and fullness of the abdomen. A "specialist" uses chloride of zinc, flour and water, to form a paste. This is dangerous in the hands of the inexperienced, burning the flesh severely. White vitriol (sulphate of zinc) is caustic but milder.

Applications to be effective must have an affinity for albumen and exceed the rapidity of growth in their destructibility; they should be antiseptic. A paste, as good as any, and one which may be used in the household, consists of the inspissated juices of poke leaves and sheep sorrel, in equal quantities.

We have an opinion that if ever a specific is found for this disease it will be of the nature of carbolic acid. In open ulcer, whether benign or malignant, this does well, and we shall continue its use until a better is discovered. With a syringe we freely wash out the cavity three or four times daily with a solution of one part of the acid to thirty parts of warm soft water. After each washing a pledget of cotton thoroughly wet in a mixture of carbolic acid one part, and glycerine twenty parts, is applied, gently pressing to the base. In addition to the remedies indicated in each case, we prescribe three drop doses of the acid in syrup or water, three times a day. The fetor is thereby destroyed, the pain relieved, the growth arrested, and

the cancer may succumb. In cancer of the womb, the pledget is passed to its place through a speculum or tube and the vagina is frequently smeared with the antiseptic ointment to prevent the escaping fluids producing inflammation or erosion.

Pain is the distressing symptom in carcinoma, but it should be borne, if possible, during the day, and opiates given at night to secure sleep. When recovery is doubtful or the case hopeless, morphine may be used continuously.

The time was when the results of treatment were interpreted: "If it was cured, it was not a cancer;" or, "If it was *not* cured, it was *of course*, a cancer." The microscope now settles the diagnosis. That cancer is sometimes curable, we know.

ORDER II. TUBERCULAR DISEASES.

SCROFULA.—*Tubes Glandularis.*

This disease was at one time known as "King's Evil," and was supposed to be cured by the "royal touch." In our day we have a plan more in accord with common sense.

What is popularly known as scrofula exhibits itself in a pale countenance, flabby muscles, general debility, and particularly in swellings or lumps at the sides of the neck. These glandular enlargements sometimes reach a great size or break down, the matter discharging through the skin by many pipes or canals, or devouring the surface by ulcers. In either case, upon healing, permanent scars remain. Other symptoms less prominent attend; variable appetite, constipation, dark-colored urine, emaciation, etc. It attaches more commonly to the light-haired, blue-eyed, thick-lipped, etc., and is considered by most physicians, hereditary. It is, emphatically, a disease of imperfect nutrition. "The mother may have been underfed in puberty or through previous generations; or miserably enervated by various causes; or may have been fed, during gestation, with innutritious substances; or suffered from impressions, depressions, shocks, privations, exertions, abuses, excesses, altering the nutrition of the unborn or new-born child. All these agencies are productive of struma." Occurring in a child of healthy parents, we may look for some defect in previous generations just as we observe in the grandchild the traits of its grandparent or more distant ancestor.

It is distinguished from syphilis by the fact that scrofula destroys the superficial parts first, while syphilis first attacks the bones and cartilages.

TREATMENT.

Besides the adoption of every hygienic means, such as good and easily digested food, fresh air, sunlight, exercise and salt water baths, every organ must be brought into normal activity. This applies especially to the skin, kidneys and bowels. If the glands of the neck are enlarged, give the Queen's root alternative:

R.—Fluid ext. of Queen's root, ...	four ounces,
Fluid ext. of Poke Root, ...	two ounces,
Fluid ext. of Blue Flag, ...	two ounces,
Fluid ext. of Mandrake, ...	one ounce,
Iodide of Potash, ...	two ounces,
Simple Syrup, ...	twenty ounces.

Mix.

A teaspoonful every three or four hours. In all such cases, particularly where emaciation appears, we use Cod-liver oil. A pleasant prescription is that recommended in the treatment of consumption. This treatment, with long adhesive strips to pass around the neck and give pressure upon the enlarged glands, may disperse or heal them. The syrup of the Iodide of Iron is advantageous with some. If the glands continue to enlarge, it is best to favor suppuration by hot packs. The opening should be enlarged by clipping with the points of scissors. These should be thoroughly and frequently cleansed by syringing with a solution of carbolic acid and warm water. When the matter ceases to form, the antiseptic ointment, a dry compress and a bandage simply tied around the neck, will complete the cure. The constitutional treatment should be continued until the health is restored.

SCROFULOUS DISEASES.

It is generally believed by physicians that every agency which tends to impoverish the blood or diminish the vitality of this vital fluid engenders scrofula. Hence the term scrofulous comes to mean an impure or vitiated condition of the blood, and in this volume has often been used in this sense. It will be evident that the diseases we

are about to enumerate are but one and the same thing, *scrofula*, but presented in the various forms of catarrh, leucorrhœa, running ears, some chronic diseases of the eye and the eyelids, erysipelas, cutaneous diseases, goitre, white-swelling, consumption, cancer and idiocy.

We conclude this subject with the prophetic words of Dr. A. Wilder: "If the internal order of dwelling-houses should be reformed; if there was more living in the sunlight and open air, a general disuse of alcoholic liquors, greater cleanliness of person and more universal purity of morals, this scourge of our race and civilization would disappear. But till attention is directed to this subject we must expect an increase of deformed and idiotic persons as well as of the insane and drunken; invasion of pestilence and mysterious disease and a catalogue of ills, moral and social, as well as physical and intellectual, which will, at stated periods and cycles, threaten to destroy our population and to pervert our customs and institutions."

MARASMUS.—*Tuberculosis Mesenterica, Pædatrophia.*

Consumption, in common parlance, is a disease of the lungs, but this affection spends its force upon the glands and lacteals of the bowels. It is confined to children of scrofulous constitution and many of the symptoms are the same as those of consumption. The little one wastes away continually. The disposition is irritable, the appetite capricious, sometimes unnatural, wanting, and then voracious, even to the extent of a full supply to two adults. Notwithstanding this the emaciation daily increases, especially noticable about the neck, legs and arms, while the abdomen becomes hard and protuberant. The muscles are soft and flabby, the countenance dull, the eyes expressionless, sunken and surrounded with dark circles, and the bowels constipated.

TREATMENT.

This consists in using the means recommended for consumption and scrofula modified to suit the age, and all hygienic measures that increase and preserve the vitality.

CONSUMPTION (*Phthisis*), belongs properly to the *Tuberular Diseases*, but we will consider it under Class III, Local Diseases, Order VII, Lung Diseases.

CLASS III. LOCAL DISEASES.

ORDER I.—DISEASES OF THE BRAIN AND GENERAL NERVOUS SYSTEM.

INFLAMMATION OF THE BRAIN, BRAIN FEVER,**FRENZY.—*Phrenitis, Meningitis.***

The inflammation may be confined to the substance of the brain or its coverings, but this is of no practical value, as there is but little distinction between the two. It may be brought about by violent mental emotions, by sun heat, by injuries, or by inebriation, but is not frequent, and is met oftener as typhus fever or as a complication or sequence of other fevers. The marked feature is a strong tendency of blood towards the head. Quinine, opium and morphine, have a similar tendency, and are in this condition injurious and often fatal. The symptoms are high fever, hard and rapid pulse, headache, increasing in severity, flushed face and eyes, contracted pupil, coated tongue, ringing in the ears and intolerance of light and sound. The patient is irritable and sleepless, and, in the earlier stages, we have violent delirium, afterward low and muttering, with jerking of the tendons, picking at the bed clothes, gradually lapsing into insensibility and coma.

TREATMENT.

Occurring in children, we are limited to the use of cold packs to the head, the spirit vapor bath, sponging the body with cool water.

while the temperature is high, and the use of gelseminum or belladonna in small doses. In the adult, we follow a plan about like this :

R.—Podophyllin,		two grains,	
Cream of Tartar,		two ounces.	
			Mix.

Triturate thoroughly and divide into four powders. Take one in syrup every two hours till the bowels move freely. In some violent cases this has restored consciousness. Have the house quiet. If the stomach is irritable apply a mustard paste over the region of this organ. Give internally the tincture of veratrum viride in two or three drop doses, every hour or two. Use the spirit vapor bath or sponge the surface with cool water. Seldom do we see the need of mustard paste to the feet and nape of the neck, but would use them when indicated.

SPOTTED FEVER.—*Cerebro-spinal Meningitis.*

This disease is chiefly epidemic and centres, as its name implies, upon the meninges or coverings of the brain and spinal cord. While other fevers may be traced directly to miasm, defective drainage, impurities in drinking-water, sewer gases, etc., the specific poison in this disease has not been discovered. It prevails in circumscribed localities, but makes no exception on account of any care or precaution taken in reference to preserving the best sanitary conditions. It also attacks the young and vigorous as well as the scrofulous, debilitated or infirm. In its more violent form it is contagious. In the cerebral type the brain symptoms are the most prominent, commencing with dizziness and headache and progressing with the fever, until delirium or spasms follow. Nausea and vomiting are present and accompany any motion of the head. There is a sinking sensation at the pit of the stomach, great prostration, pain in the spine and limbs and an acute sensitiveness of the skin, which is painful upon pressure. The characteristic sign of the disease which is developed

later, is the spasm of the back by which it permanently curves forward and by which the head is thrown backward as far as possible and there kept. The attacks vary; in some delirium and other of the worst features of the disease develop in the first day or two; in others the fever may not reach its height in a week; some recover within ten days, and in others convalescence is protracted weeks, perhaps months. So with the peculiar eruption which gives to it its name: it may appear upon the first, second or third day, or it may be entirely absent. This varies also in character, color and position; closely resembling flea-bites and ranging from scarlet to brown. When the disease is of long duration, there may be almost complete loss of muscular power, also blindness or deafness, insanity, idiocy and softening of the brain. The bowels are at the first constipated, but may run into diarrhoea. The bladder is troublesome from the tendency to retain urine.

It is distinguished from typhoid fever by the violence of the attack; the brain being so speedily overcome by the sudden prostration, while in typhoid the person may be ailing for days before being compelled to go to bed. In cerebro-spinal meningitis the pulse is much slower and the temperature of the body rises but little. There is pain in the head and back, the head is bent backward, and firmly held in this position. These last symptoms will also distinguish it from typhus. In lockjaw the muscles are rigid, and there is an absence of delirium, but consciousness continues to the end.

The indications are to relieve the inflammation in the cerebral membranes, to prevent effusion or if it has occurred, to promote absorption, to neutralize the blood-poison, to relieve the pain in the spine and back of the head and the rigidity of the muscles of the back and to tone up the system during prostration.

TREATMENT.

The first indication is met by administering

R.—Veratrum Viride,	.	.	forty-eight to eighty drops,
Water,	.	.	sixteen teaspoonfuls.

Dose: a teaspoonful every four hours.

Two hours after each dose of this mixture give a teaspoonful of the following:

R.—Tinct. Belladonna, . . . forty-eight to eighty drops,
Water, . . . sixteen teaspoonfuls.

Mix.

This tends to equalize the circulation and to contract the peripheral blood-vessels and in so far as it is successful, to such an extent is the local inflammation abated. The second point is met by giving

R.—Podophyllin, . . . two grains,
Cream of Tartar, . . . two drams.

Mix thoroughly, divide into four and give one every four hours in syrup, repeating until followed by copious watery discharges from the bowels, then stop. There is no griping and no irritation of the alimentary canal. If nausea or vomiting are present, precede the administration of this remedy with the application of mustard paste over the region of the stomach until the surface is well reddened. Of the greatest importance in this particular is the use of the spirit vapor bath by means of the rubber bag filled with hot water. Free perspiration causes the further elimination of fluid and with it the blood-poison, and by its effect upon the circulation removes to some extent the fever and meningitis. The third point is covered by the two just mentioned. The pain in the head and the sensitiveness discovered along the spine upon pressure yield kindly to frequent bathing with the aconite liniment, which consists of

R.—Tinct. Aconite root,
Tinct. Arnica flowers,
Laudanum, . . . equal parts.

When convenient, a long, narrow strip of flannel may be saturated with it and applied to the spine and a piece of oil-silk placed between the flannel and the clothing. At the back of the neck the silk lies between the flannel and the pillow. The best tonic in all cases is good food, but to be of benefit, it must be digested and absorbed.

In this as in other diseases in which the nervous system is debilitated, the supply of nervous stimulus to the stomach is deficient if not altogether wanting. Warm milk, milk porridge, beef-tea are valuable, but should be given only in small quantities. If the patient desires, it may be frequently repeated. It is fashionable to stimulate, but it seems neither reasonable nor scientific to use alcohol in any form when the brain is affected.

R.—Tinct. Nux Vomica, ... ten drops,
 Water, ... half a tumblerful.
 Mix.

Give a teaspoonful every four hours. During prostration and convalescence alternate with this by administering two hours after each dose, a teaspoonful of

R.—Dil. Phosphoric acid, ... one dram,
 Water, ... a half-tumblerful.

These give strength to both muscles and nerves, increasing in their power and benefits while employed, and they are followed by none of the deleterious effects of alcohol noted more particularly when this agent is discontinued. If upon examination the bladder is discovered to be full and urine is retained or only dribbles away, apply a hot pack upon which spirits of camphor has been sprinkled, over the lower part of the abdomen.

CONCUSSION OF THE BRAIN.

From external injuries or blows as in falling from a height or having some weighty substance strike the head, the brain and nervous centres are shocked. Unconsciousness succeeds immediately and may be more or less protracted according to the amount of internal disturbance. When simply stunned, the person will recover his senses in a short time and be able to stand and walk. Not so if the shock has been severe. The comatose condition continues, the breathing is labored, pupils contracted and pulse weak and irregular. If not

revived the insensibility becomes deeper, the surface cold, dissolution approaches. In recovery from this condition, consciousness slowly returns and the power of motion still more tardily, consuming hours or days in its completion.

Shock or stun is but one effect; there are other and more serious complications. The blow may have been so heavy as to rupture a blood vessel, when the symptoms of apoplexy supervene. Or the skull may be fractured and a spicula of bone press upon the cerebral mass, a condition known as *compression of the brain*. The symptoms are still apoplectic; unconsciousness, jerky, noisy breathing, nausea and vomiting.

It is distinguished from other comatose conditions in the manner described when we come to speak of coma.

TREATMENT.

In concussion of the brain the object should be to restore as speedily as possible to the brain its lost stimulus, the blood. The body should be placed at an angle of 45° , with the hips elevated and the head dependent. Sprinkle water on the face and apply to the nostrils hartshorn (smelling salts). The bowels may be injected with two to four teaspoonfuls of brandy or whisky in a cupful of warm water. Compression must be relieved by the surgeon's aid, the catheter used to evacuate the bladder, and injections for constipation.

SUNSTROKE—*Coup de Soleil*.

This condition is caused by exposure either to the direct rays of the sun or to an intensely heated atmosphere. The brain becomes congested and its membranes inflamed, or the lungs are congested, or there is nervous exhaustion with failure of the heart. The skin is hot and dry, the pulse quick and feeble, the face flushed or pale, the tongue red or brown, the pupils contracted, the eyes bloodshot, the vision dim, the breathing difficult, and the evacuations involuntary. The attack is preceded by dullness, headache, and a general feeling

of uneasiness; even these are sometimes wanting and the patient falls suddenly and expires. However mild the stroke it is not unattended with danger, and for years afterward the patient is easily overcome by heat during the summer, by walking or working in the sun, especially if fatigued.

Insolation can usually be prevented by the constant application of cold to the head. Persons exposed to a scorching sun should wear in their hats a sponge, handkerchief, or large plant leaf, which ought to be frequently wet, and, as a further precaution, should avoid the use of large draughts of cold water or spirituous drinks.

Over and over again in India the immunity from sunstroke enjoyed by temperate men has been observed. It may be interesting to recount Sir Charles Napier's description of his personal seizure while serving in India: "I had hardly," writes Sir Charles, "written the above sentence, when I was tumbled over with heat apoplexy; forty-three others were struck, all Europeans, and all died within three hours, except myself. I do not drink. That is the secret. The sun had no ally in liquor in my brain."

It is distinguished from apoplexy by feeble, not full pulse, by less complete insensibility, it being often possible to arouse the invalid by speaking in a loud voice, by dizziness and feebleness of motion, but not paralysis. In most instances sunstroke is attended with headache, apoplexy seldom.

The indications are to relieve the congestion of the brain when the face is flushed and the superficial veins prominent, or when the face is pale and the symptoms of exhaustion predominate to stimulate the nervous system.

TREATMENT.

As just observed, the plan varies with the condition presented. In the former case, that of congestion of the head, the patient should be laid upon the back, the body so inclined that the feet are lower than the head. Clothing about the neck should be loosened and cool water frequently poured upon the head and occasionally upon the

neck and upper chest. Give no remedies internally. If there is nausea apply a mustard paste over the stomach. If additional means are thought necessary, bands may be tied around the thighs close to the body sufficiently tight to cause the veins of the legs to swell. This imprisons so much blood, and besides keeping it from doing damage to the brain or lungs, preserves the vital fluid for future use. As convalescence progresses these may be gradually slackened. If the invalid shivers, the application of water should be discontinued and plenty of warm coverings supplied. Sleep soon follows.

In the other condition, if the patient can swallow, give a teaspoonful every ten or fifteen minutes of

R.—Brandy,		four ounces,
Tincture of Capsicum,		one-half ounce.
		Mix.

Or, which is preferable, of

R.—Compound Spirits of Lavender,		two ounces,
Chloroform,		two drams.
		Mix.

If swallowing is difficult or impossible, the doses may be mixed with water and administered by enema. Apply cold water or ice to the spine. Rub the arms and legs to help the circulation, bathing them occasionally in cayenne pepper tea.

Veratrum viride and aconite are the remedies to combat the fever that follows. When this has subsided, a tonic should be used, preferably

R.—Phosphorus,		one grain,
Extract of Nux Vomica.		twenty-five grains.
		Mix.

Make one hundred pills. Dose taken after meals; beginning with one pill daily and increasing to three daily, if required.

HEADACHE.—*Cephalalgia, Hemiorania.*

Here again we have a symptom of a disease rather than a disease itself. It is as often due to a disorder in other organs as in the brain

itself. Headaches vary as much in character as in cause; the pain may be sharp, lancinating, dull, throbbing, light or intense, may affect one part of the head, several parts or the whole, may be continuous, as in diseases or tumor of the brain, or periodical, which is the more common form. The latter are less dangerous and more susceptible to treatment. Headaches are, in some families, hereditary. Disorders of the stomach, bowels, liver, womb and nervous system, are the most frequent causes. Slight headaches happen more or less frequently to everybody.

The popular names given to the different kinds of headache are used indiscriminately. What one calls nervous headache another calls sick headache; besides, either one or the other may be entirely misnamed and be either congestive or dyspeptic headache. We will endeavor to describe them by names which are more accurate or by which they are more commonly designated by the intelligent.

In *dyspeptic headache* we have chilliness, cold feet, flushed face, hot forehead, dull pain in the front or sides of the head, furred tongue, loss of appetite, dry skin, nausea and vomiting. It seems as though one would go crazy or the head would split open. Bowels may be constipated, although irritation may exist in the stomach and the bowels continue to move. May be accompanied with neuralgia.

Sick headache is similar in character and differs only in the character of the pain, which is sudden, sharp and piercing at times. It increases in severity up to and through the nausea and vomiting, which latter seem to be an effort of nature to rid the system of irritation, open the secretions and equalize the circulation. The bowels are more likely to be constipated in this form.

Nervous headache closely resembles sick headache. It is an affection of the feeble, debilitated and brain-working classes. Females suffer most frequently. They are subject to attacks upon nervous excitement, excesses, shopping, and it is a symptom of uterine disease. There is dizziness, sharp pains and constipation. With rest and fasting it passes off. In the hysterical we have a kind of ner-

vous headache termed by physicians *clavus*, which is the Latin for nail, because the pain is intense and confined to one spot, as though a nail was driven into the brain.

Neuralgic headache is a species of nervous headache. It is a type found in the delicate, asthenic and enfeebled. The paroxysms are periodical and may last for years. The subject is afflicted with neuralgia in other parts of the body. The pains are sudden and darting, and may pass to the face or run along the jaws. Decayed teeth may be the cause.

Rheumatic and Gouty headache has little or no heat in the head, the pulse is seldom disturbed, and the pain is sometimes relieved by pressure. The urine will be found scanty and high-colored. The structure of one of the coverings of the brain is of that peculiar character in which rheumatism becomes seated. Rheumatic pains are felt in other parts of the body, and usually the sick has had acute rheumatism. Such being the case, and the symptoms corroborating, the headache may be suspected to be rheumatic. Inactivity or congestion of the kidneys, which produces scanty and high-colored urine, may give rise to headache closely resembling the rheumatic variety. Dull pain and lameness of the small of the back are associated with this condition.

Bilious headache is like sick headache, but there is a jaundiced hue of the skin, the tongue is coated yellow, and there is a bitter taste in the mouth. Nausea, vomiting and diarrhoea follow.

Congestive headache is a species not so familiar, but exceedingly common. It is not so easily distinguished, because of its appearing in two forms which in appearance differ widely. In one the face is red and flushed, in the other pale. In both there is an abnormal tendency of blood to the head. When the arteries are congested the former appearance prevails; when the veins are filled and sluggishly return the blood to the heart, the patient is pale. Both may result from stooping, fatigue, exposure to the sun, etc. In one the pulse is hard, face flushed, eyes suffused. The opposite is oftener met in those of spare habit. The face is pallid, eyes dull, pupils of the eyes

dilated, extremities cold, and pulse soft and feeble. The sensation is described as a cord tightly bound around the head.

TREATMENT.

Of course, this will vary with the character of the disease, and we can only in a general way indicate remedies for special conditions. We have cured headaches that have lasted for years, but only by the employment of medicines pure and unadulterated. This point we emphasize here on account of its importance. In another place we shall consider the matter at length.

The indications are to frustrate the attack, relieve the pain if it ensues, and afterwards remove the cause, or place the system in such a condition as to withstand the morbid influence.

Upon the first appearance of the approach of dyspeptic or sick headache,

R.—Fluid Extract of Rhubarb,	. . .	one dram,
Brandy,		two drams,
Essence of Spearmint,	. . .	thirty drops,
Bicarbonate of Soda,	. . .	one dram,
Simple Syrup,		four ounces.
Mix.		

Take a teaspoonful every hour, or a teaspoonful of calcined magnesia may be taken in sweetened water or milk every hour for three or four doses. In bilious headache we prefer

R.—Podophyllin,		two grains,
Cream of Tartar,		two drams.
Mix.		

Make four powders and take one every hour, in molasses. In nervous headache from excitement or fatigue,

R.—Chloroform,		one dram,
Comp. Spirits of Lavender,	. . .	one ounce.
Mix.		

A teaspoonful every hour will generally relieve by the third or fourth dose.

Opium in any form should not be used for the relief of the pain of

headache, as its tendency is toward the head and it congests the blood-vessels of the brain. If the head is hot apply cold compresses to the head and a mustard paste to the back of the neck. If the feet are cold put them in hot water or retire and take a spirit vapor bath with the rubber bag. In my own experience I have frequently stopped a severe headache in fifteen minutes by this means alone. I believe that one of the most pleasurable sensations to which the system is susceptible is the feeling of a severe headache gradually and surely departing. I confess personally to none greater.

In the nervous, neuralgic and one form of the congestive species we rely upon

R.—Tincture of Gelseminum, (green root)	one ounce,
Essence of Wintergreen,	one dram,
Water or Simple Syrup,	four ounces.
Mix.	

Take a teaspoonful every hour until the pain abates. Better lay down for several hours after the third or fourth dose, on account of the relaxation produced by the remedy.

In that form of congestive headache which is accompanied with pallid face, dull eyes, dilated pupil, etc., give

R.—Extract of Belladonna,	three grains.
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Make twelve pills and give one every hour. Three to six are sufficient. Rest while the narcotic effect lasts. This article must be pure and we recommend the imported English extract, that you know to be such. Belladonna contracts the blood-vessels of the brain, opium has the opposite effect. This and the gelseminum are my standard remedies in all headaches and may be alternated with other remedies that may be employed, some of which we will presently indicate.

In general then, see that the stomach is alkaline, that the bowels are freely opened, that the skin is moist and the circulation normal. Attention should in all cases be given to the quantity and color of the urine. If scanty and dark-colored, as generally in rheumatic headache, take

R.—Tincture of Colchicum,	. . .	four drams,
Spirits of Nitre,	. . .	three drams,
Acetate of Potash,	. . .	two drams,
Essence of Wintergreen,	. . .	one dram,
Water,	. . .	three ounces.

Mix.

Take a teaspoonful every two, three or four hours. Sometimes the bowels fail to act, in which case give some preparation of Golden seal to tone them up. The system must be rid of rheumatism, gout, liver and stomach difficulties, malaria, neuralgia and other inherent complications or the headache will recur. A good point is gained by breaking up the periodicity by one of the means above mentioned. While headache may thus be relieved and its duration shortened, the object should be to remove the foundation upon which it develops.

SLEEPLESSNESS.

This is hardly a disease of itself. It follows fevers, excesses of different kinds and accompanies general debility and many chronic diseases. Even in acute diseases, such as acute inflammation of the lungs where coughing would only increase the irritation and in diarrhoea and dysentery where wakefulness would still further disturb the bowels, there is in a majority of cases, a demand for some narcotic that will insure a night's rest. "Balmy sleep" is "nature's sweet restorer." Opium is wanted, but we dislike its use from the fact that it constipates; besides it cannot be relied upon as a nervine. Valerian is sometimes good, but there is a tendency to irritate the stomach and bowels. A combination like the following will meet every particular and obviate all deleterious effects.

R.—Tinct. Valerian (English),	. . .	one fluid ounce,
Calcined Magnesia,	. . .	two drams,
Tinct. Opium,	. . .	one fluid dram,
Peppermint Water,	. . .	three fluid ounces,
Oil of Anise,	. . .	twenty to forty drops.

Mix.

Shake well and take a teaspoonful upon retiring as often as necessary. This recipe is good also in hysterical cases and any case where exhaustion has followed want of sleep, and for females at the turn of life, for coughing in lung diseases acute or chronic, and in recovering from fevers in addition to the treatment elsewhere indicated in such cases.

Where the brain is active, from fatigue or excitement, bromide of sodium may be given dissolved in water. It is an efficient and harmless remedy, being followed by no unpleasant or detrimental effects. Or the feet may be soaked in hot water before retiring or the hot water bag placed at the feet. This calls the blood away from the head. A bowl of bread and milk at bedtime does well with some: persons in literary pursuits after hours of restlessness have returned to bed after a lunch and slept soundly.

NIGHTMARE.—*Incubus*.

From the common and the medical terms we get the idea of a hag or demon, representing night, lying upon the chest, and this comes closely to a description of our feelings, an oppression of the chest. Dunglison thus defines it: "A sensation of a distressing weight at the epigastrium (pit of the stomach) during sleep, and an impossibility of motion, speech or respiration; the patient at length awaking in terror, after extreme anxiety. Nightmare is often the effect of difficult digestion, or of an uneasy position of the body. At other times it occurs in consequence of severe emotions. The sensation of suffocation was formerly ascribed to the person's being *possessed*, and the male spirits were called *incubus*, the female *succubus*. The disease requires no particular treatment; the causes must be avoided.

"*Daymare* is produced during wakefulness; the sense of pressure being severe and extending over the abdomen; respiration frequent, laborious and constricted; eyes fixed; sighing deep and violent; intellect undisturbed." This form of nervous disorder is rare.

Dreaming is a partial activity of the mind in disturbed or unsound sleep. In sound and healthy sleep all the faculties of the mind and the muscles and organs under the control of the will are at rest. In dreaming, the will, judgment and perceptions may be inactive, and the imagination active, and sometimes the memory. It follows indigestion, excitement, worry, etc. Some men have done really hard mental work while asleep. Condorcet finished a train of calculations in his sleep, which had much puzzled him during the day. In 1856 a collegian noticed the peculiarities of a fellow-student, who was rather stupid than otherwise during his waking hours, but who got through some excellent work in geometry and algebra during sleep. Condillac and Franklin both worked correctly during some of their sleeping hours.

The work done, partakes in many cases more of the nature of imaginative composition than of scientific calculation. Thus, a stanza of excellent verse is in print which Sir John Herschel is said to have composed while asleep and to have recollected when he awoke. Goethe often set down on paper, during the day, the thoughts and ideas which had presented themselves to him during sleep on the preceding night. A gentleman one night dreamed he was playing an entirely new game of cards with three friends. When he awoke the structure and rules of the new game, as created in the dream, came, one by one, into his memory, and he found them so ingenious that he afterwards frequently played the game.

Coleridge is said to have composed his fragment of "Kubla Khan" during sleep. He had one evening been reading Purcha's "Pilgrim;" some of the romantic incidents struck his fancy; he went to sleep, and his busy brain composed "Kubla Khan." When he awoke in the morning he wrote out what his mind had invented in sleep, until interrupted by a visitor with whom he conversed for an hour on business matters; but, alas! he could never again recall the thread of of the story, and thus "Kubla Khan" remains a fragment.

Dr. Good mentions the case of a gentleman who in his sleep, composed an ode of six stanzas, and set it to music. Tartini, the cele-

brated violinist, one night dreamed that the devil appeared to him, challenged him to a trial of skill on the fiddle, and played a piece wonderful for its beauty and difficulty. When Tartini awoke he could not remember the exact notes, but he could reproduce the general character of the music, which he did in a composition ever since known as the "Devil's Sonata." Lord Thurlow, when a youth at college, found himself one evening unable to finish a piece of Latin composition which he had undertaken. He went to bed full of the subject, fell asleep, finished his Latin in his sleep, remembered it next morning, and was complimented on the felicitous form it presented.

Somnambulism. In *sleep-walking* we have a species of dreaming, with eyes open and the muscular system under control of the imagination. While some of the senses and mental faculties seem to be uncommonly acute, for often feats, dangerous in wakeful moments, are easily performed, other of the senses are peculiarly dull and blunt. The dreamer may see distinctly, but it is next to impossible to make him hear. Nor is he sensible to touch although he may be shook severely and even handled roughly, without awakening. Indigestion and late and hearty suppers are some of the causes. While the digestion is being improved, the doors and windows should be fastened at night and all fragile articles of furniture removed from the room.

Somnolency is sleep protracted beyond the regular periods. It is a symptom of some diseases.

COMA.

This is defined as a profound state of sleep from which it is extremely difficult to rouse the individual. The eyes are closed and by calling loudly may be opened, but only momentarily. This condition accompanies many diseases and we give it special notice only because we are shocked every little while by the newspaper reports that some one was picked up in the street and taken to a prison-cell where he died during the night. Can we tell whether he was drunk

or dying? Not so easily, but if there is the least doubt, better send to a hospital: it will not injure the drunkard, and may save the life of the apoplectic. To show the fears that pervade intelligent circles, a recent incident is in point. A patient was taken with vertigo. Thinking it would soon pass off he continued to walk, or rather stagger, hoping to reach a drug store. When it was impossible to go any further he "embraced" a lamp post. Almost unconscious and speechless, he happened, on looking about for help, to find that he was watched by one of the "best police in the world." A news item in the morning's paper came to his thoughts and he declares his mental sufferings during the next ten minutes could not have been greater if he was about to be led to the gallows.

First, smell the breath. The scent of liquor does not necessarily imply drunkenness, as he may have taken a small quantity because he felt unwell, or it may have been administered by a friend. Next, look for wounds on the head. If deep, they may have come from a blow, but if slight, possibly from the fall of a fit. From "stunning," recovery is slow or rapid, but progressive. The feebleness of respiration, rapid but weak pulse, and nausea soon pass off. Not so, however, if the injury or disease has caused compression of the brain by internal bleeding (apoplexy), or by fractured bone. The insensibility is more complete, the respiration labored and noisy, pulse slow, eyes fixed, and pupils, bowels and bladder relaxed. Again, observe the tongue, and if bitten and bleeding, it may be inferred that the attack was epileptic; from this, however, consciousness speedily returns. Poisoning may be suspected; if from opium or morphine the pupils will be found closely contracted and the surface bathed in profuse perspiration.

TREATMENT.

As most of the conditions above alluded to receive special attention in other places, only general directions are given at this time. As paralysis follows apoplexy, great care is necessary to diagnose it. Besides, a treatment that would meet most cases of coma would here be likely to increase the danger, if not destroy life. In apoplexy the

head must be raised and supported, the feet kept warm, the thighs bandaged to keep the blood in the veins of the legs and away from the head, and a cathartic given. The use of ammonia, amyli and emetics, are strictly prohibited. If it is not apoplexy the strong spirits of ammonia may be sprinkled on a handkerchief or cloth and brought near the nostrils. If the stomach contains alcohol or poison the stomach pump or emetics may be employed. If the skull is fractured and there are signs of compression, the surgeon's help is necessary to raise the depressed bone. With returning consciousness from coma headache is discovered, necessitating quiet and rest.

PROGRESSIVE LOCOMOTOR ATAXIA.

The characteristic of this disease is the loss of control of motion, or the nerves of motion. The person cannot direct the muscles or control their action so as to effect his purpose. He may be unable to walk or stand without assistance and yet be able when seated to thrust out his feet as vigorously as before his powers were impaired. The disease is often preceded for years by spinal irritation. Sometimes pains, like galvanic shocks, pass down the legs and thighs. The disease progresses slowly for years. In walking the ground feels soft and shaky, the gait is uncertain and tottering, or there is inability to walk without assistance. The attention is strongly directed to the motion of the feet and when the eyes are closed the patient cannot stand and begins at once to fall. The limbs in walking are jerked spasmodically upward and forward and then brought forcibly to the ground. The feet rise unequally and the knees give way from before backward. The left side is usually more affected than the right. As the disease progresses, the upper limbs become involved and the patient cannot button his coat or take his food without assistance.

TREATMENT.—No general directions can be given.

SOFTENING OF THE BRAIN.—*Mollities Cerebri.*

This is a disease in which the nerve cells of the brain become degenerated. Of the causes producing it we have sufficient knowledge, but of the process itself we know nothing. The signs of its existence are quite apparent, but the change in structure is so slight that it can only be detected by the microscope. We are not now considering mechanical softening caused by dropsy, hemorrhage and apoplexy, nor putrefaction following death in warm weather. Softening occurs mainly in adult life and is rarely, though occasionally, seen in the young and middle-aged. In later years, and more particularly in cities, it is being more frequently developed in middle life. The disease being one of exhaustion and irritation of the brain, any overstrain telling upon the nervous system becomes an exciting cause. The inevitable sequences of the extra press of business, its unusual confinement, the rapid gain or loss of money, the sudden demise of loved ones, the consciousness of guilt, the involvement of estates and the excitement of venture, are anxiety and worry. Attendant upon these conditions and intensifying them are the physical phenomena of dyspepsia and sleeplessness. By what friends term "eccentricities," the profession discover that the brain is affected, but their timely warning of danger is little heeded.

This is the age of steam, of electricity, of rapid intercommunication. The measured cadence of the cutting saw is replaced by the buzz of the steam saw; the once familiar sound of the ploughing plane is substituted by the hum of the planer; the creak of the wooden weaver gives way to the rattle of its steel and iron rival; the coach, slow and lumbering, is transformed into the railway carriage, thundering along at the rate of a mile a minute; the newspaper is dissatisfying unless it supplies the records of yesterday's events in the whole world, to be digested with one's breakfast. We are proud of such achievements; but we regret their cost and their influence. This high-pressure activity produces morbid excitement, unrest and

worry in the people. When we were young we were all told that some day we might be President of the United States. Now the young and the middle-aged are goaded to ambition by examples of Stewart and Vanderbilt, that they may "amaze Broadway with haughty carriage." Public spirit is drowned in private greed. The health of the people is sacrificed without remorse in mammon worship. Every department of life, social and political, is marked by immoderation and discontent. The demands of trade are never so great but the individual believes they can be met, and he flatters himself that he is capable if it should double. The artist, the author, the professional man, covet the fame of those who,

" While their companions slept,
Were toiling upwards in the night."

The lash so frequently applied must leave a scar. Retribution follows. Under the overstrain the nervous system yields.

Intemperance and insanity will often develop softening of the brain. The old sot stops his career in imbecility and breaking down of the nervous system. In children whose brains grow too fast and bodies too slowly, it appears, or may arise from a constitutional tendency in this direction inherited from the parents. The hard brain worker, like the inventor, or lawyer, or editor, or clergyman, or broker, or speculator, is a common victim.

The symptoms vary according to the part of the brain affected, whether the disease is of rapid or tardy development. Acute attacks may be associated with delirium. In all cases there is headache, feebleness of intellect, depression of the muscular and physical powers; palsy, temporary or permanent; and loss of memory to such an extent that they forget what they have done or if they have eaten, and will repeat either if opportunity offers. Even words are recalled with difficulty, and sometimes there is constant babbling of the same words or sentence. Like the insane, some have a favorite subject upon which they can converse without difficulty, but are obtuse in all others, recollecting with great difficulty, if at all, the names of in-

imate friends and places and the circumstances of remarkable times and events. Occasionally we meet with muttering, foolishness, silly incoherency, stupid vacuity ; even lethargy, trembling, tendency to coma and paralytic fits and convulsions.

TREATMENT.

This is chiefly prophylactic and consists in avoiding excitement or other cause. Examination of the urine discloses the fact that the phosphorus of the system is lost in large quantities; hence the admixture of this agent is forcibly indicated. Give therefore a pill consisting of

R.—Phosphorus, ... one hundredth of a grain.
 Nux Vomica, ... one-quarter of a grain.

Mix.

One immediately after each meal. Or if the person cannot swallow pills, give

R.—Dilute Phosphoric acid, ... one ounce,
 Simple Syrup, ... five ounces.

Mix.

Teaspoonful every four hours. Counter-irritation by mustard paste to the back of the neck, or by bathing the spine with tincture capsicum; by sprinkling cayenne pepper through a sieve upon that side of the sole of the stocking which comes next to the foot: these plans call away the blood from the head and are to this extent remedial. In anæmia or bloodlessness, give citrate of iron or some other preparation of this metal. If there is a tendency to convulsions, give the bromide of potash compound, presented in the treatment of epilepsy. (See page 861).

The amount of food should be restricted to a little less than that required by a healthy adult of the same age and constitution. If dyspepsia is present, it should be managed as indicated in the essay upon this topic. Electricity is of advantage in improving the muscular powers. Constant quiet is imperative and, in addition to good nursing, can be best secured by change of locality. Moderate out-

door exercise or systematic gymnastics under a physician's supervision is beneficial. In confirmed cases there is no remedy; the mind is shattered and the brain disorganized.

MENTAL DERANGEMENT.

INSANITY.

In some form all have duties and cares incumbent upon them. To the facility with which these are performed or discharged, is due much of the comfort and pleasure of life. But the extra press of business, its unusual confinement, the rapid gain or loss of money, the demise of loved ones, the consciousness of guilt, the involvement of estates, the excitement of venture, all beget *anxiety* and *worry*. Attendant upon these conditions and intensifying them are the physical phenomena; loss of appetite, constipation and sleeplessness. By what friends may term "eccentricities," it is discovered that the brain is affected, and the professional warning of danger is little heeded.

"During the early stages of dementia induced by mental anxiety," Dr. Richardson states, "there is nothing more than an increased tension of the minute vessels which supply the brain. In later stages the substance of the nervous tissue itself undergoes a modification by which its activity is permanently lost. These are the physiological consequences most briefly summed up. The first symptom is a want of full bodily vigor, then follows craving for more work, disturbed sleep, acute sensitiveness to external impressions and finally strange figures and sounds are seen and heard. This condition may continue for years and the sufferer may in time begin to accept abnormal creations as natural." Dr. Richardson cites a case of a merchant who for weeks retained in his vision the spectre of three lights, oval in shape, of the size of an egg and so clearly defined to the ob-

server that he would watch them half consciously as they floated before him on the wall, the ceiling or in space. In this stage of the disease lies the foundation of all hypotheses of ghost seeing, of ecstatic visions and even of poetic frenzy.

“It is a well-known fact that we have two natures, one purely organic and emotional, the other subject to the reasoning powers. The organic nervous chain exists in the body as a link between emotional mental acts and vascular supply. An impression from without, made through the organs of the senses, upon the emotional centres, is reflected directly upon them to the vascular expanse. The part flushes or blanches and the heart hesitates, palpitates, rebounds or intermits; so that these centres, excited by anxiety, or grief, or joy, or sorrow, influence the waves of blood passing through the system and the brain promptly feels the imperfect regulation of the supply. Under varying tensions of the vessels, there are flushes, chills, coldness of the extremities and other oppressive symptoms, while in addition appear the distressing ringing or hammering sounds in the head. These sounds are arterial murmurs or vibrations of the blood, which press, with each impulse of the heart on the bony surroundings of the relaxed carotid canal, situated at the base of the skull. The cause is in direct connection by solid conducting substance with the organs of hearing and thus the faintest vibration is detected. The sound produced when it is sudden and expected, as in moments of fear, is occasionally mistaken for a sound from without, with no obvious cause. These are to the sufferer as purely physical as the common things of life, but in the majority of instances they are actual impressions made at some time on the organism and now recalled and rendered more definite by a constant recurrence.

At this point if the mental powers be allowed rest and the fountains of care be closed recovery may take place; but if the over-strain continues, the disease assumes a still graver form. There is a maddening desire for work, more work, coupled with the sad sensation that the physical powers are failing; and then there are lapses of memory. The man of business forgets important details, he is ir-

ritable, distrusts everybody and himself most, makes mistakes and yet persists in accumulating more work on himself. The poet and moralist become over-sentimental and morbid; the man troubled with remorse for guilt confesses his crime or commits suicide. The downward course is rapid; in one case epilepsy occurs, in another, paralysis, a third develops some hereditary malady like cancer, a fourth dies from nervous failure and local disease of some vital organ. The majority, escaping these special ends, become prematurely old and sink helplessly into death. The brain becomes disorganized, the balance is broken and anarchy succeeds to what once was order."

Next to worry and anxiety in the chain of causes comes excessive

BRAIN WORK.

It is a common thing in the present age for men to exert their brain at the expense of their body, giving undue labor to the one, and scarcely giving enough to the other. Health of mind and health of body ought to go together, and if a man wishes to make the most of himself and of his faculties, he should observe regular hours for sleep, work, recreation and exercise, and be temperate in his diet and in all other things. He should treat each day of his life as a whole in itself, and avoid bringing himself into a state in which artificial stimulants become a necessity. But how many persons do we find following these simple and oft-repeated rules? As a rule, professional men permit themselves to be overtaken, for they dislike rejecting business when it offers itself. And the same may be said of men engaged in trade and commercial pursuits. While business is brisk they will do, or attempt to do, all that is possible, without regard to the pernicious strain upon their system which such overwork entails. If to this be added the perpetual anxiety, hurry, loss of temper, discouragement at losses or failure and undue exultation at success which characterize the life of most business men, together with the system of taking hasty meals and not allowing sufficient time for sleep and relaxation, one need not be surprised at the number of pre-

mature deaths which daily occur. The wonder is that it is not greater. When a man desires to do a very great quantity of work he almost always is obliged to violate the rules of health to accomplish it; he has to pay a price for being allowed to do it; unless gifted with a peculiarly strong organization, his labor is accompanied by its own retribution. Of course, there frequently occur situations when men must work to the utmost; they have no choice; but on the whole, it may be affirmed that most of the ordinary work of the world may be got through without any glaring inattention to, or defiance of, the rules of health and the requirements of society. And if each man would try to find out how he can best do his own work and not try to do it according to the ways of others, a great deal of useless toil and irritation might be saved.

It may, perhaps, be urged, that there have been many brilliant cases wherein the rules of health were not only violated but outraged, and yet the work performed was of the very highest order. This is undoubtedly true of many men of extraordinary genius, who were, however, exceptional men in every sense of the word, and hence their example is not to be cited as that which ordinary persons should follow. No one, for instance, should do as the great French novelist, Balzac, used to. When he was engaged on a novel he would retire wholly from the world to write with scarcely any interruption and without taking any exercise from two o'clock in the morning till six in the evening; he allowed himself six hours sleep, and lived entirely on fruits and vegetables. At the end of some months of this life he would enter the world again looking like a spectre; yet it may be true that it was only by such abnormal work as this he could achieve what he undertook. The vast majority of men would break down under it; some men cannot do brain-work well except at night. This was the case with Schiller; while his great rival, Goethe, did all his work in the morning and never wrote after his mid-day dinner. Sir Walter Scott wrote his novels mainly before breakfast, while Byron composed his poems mostly late at night. The contrast between the results of these two opposite systems of labor is remark-

able in these four cases. Goethe and Scott respectively attained the ages of eighty-four and sixty-one, while Schiller died at forty-six and Byron at thirty-six. Moreover, Schiller indulged in champagne, and Byron in gin and water, and both habitually wrote under the influence of stimulants. They shortened their lives by their irregular mode of living and working. Goethe worked without stimulants, and Scott, though not averse to wine and ale, was a temperate man, an early riser, and fond of field sports and exercise in the open air. But even he ultimately succumbed to overtension of the brain in his desperate but honorable efforts to pay off the debts for which he considered himself responsible. Had it not been for this unnatural brain-work he might have lived many years longer. Southey, though a diligent student and constant worker, would never, under any circumstances, do with less than nine hours' sleep, and he was an abstemious man; accordingly, he lived to the age of sixty-eight. He did all his writing by day. The late Archbishop Whateley, who lived till nearly eighty, was, however, a remarkable instance to the contrary. He said that he could not produce original matter except at night, but that he could best criticise and correct in the morning. The habit of writing and reading at night may be acquired and, indeed, it very often is, especially by persons connected with the press and by others who are called upon by their avocations to do brain-work in the evening, such as actors, lecturers, preachers and others. Nevertheless there is good reason to believe that all of these would accomplish more by working as much by day as their avocations will permit, and not undertaking too much. (Phila. Ledger.)

The Hon. W. W. Phelps, addressing an Alumni Association, made the following excellent remarks: "Written by God on the face of creation is the law of rest, a law that we all break. The law is broken constantly, recklessly, and with fearful consequences, by our American people. You medical men know the fact, you meet it at every point in your professional circle. Why don't you proclaim the danger? Organize a missionary society, preach everywhere the new gospel. It will be an earnest, fighting mission.

The traditions and habits of an hundred years are against you ; the teachings of the good and the bad unite to defeat your efforts. American art and literature are against you, and so are our natural resources and free institutions. The atmosphere, social and political, in which we move and have our being is against any effort that would substitute moderation and contentment, rest, for a restless activity. Work—the duty of the work he must do—is the cradle-song of the American babe ; work—the glory of the work he has done—is the funeral eulogy of the American man. Work, says the devil, and you will gain the world. Work, says the saint, and you will gain heaven. Work, say our literature and legends, and our school-rooms tell the glory of those who,

“ While their companions slept,
Were toiling upward in the night.”

Nor is art behind, but feeds the flame with moving pictures of heroic, supreme effort. One sovereign State chooses for its insignia “ *Excelsior* ;” another, “ *Sic itur ad astra*.” And under them all, the tyrant of the nineteenth century, Public Opinion, comes in to condemn all idleness, to honor all work. All these voices whisper to the soul and fill it with dissatisfaction and unrest. It needs only Hope to rouse it to action. And Hope comes, and points with a sunbeam to national resources that were never equalled, and a highroad never before opened to all. And while she points, the air echoes with the shouts of those who triumph. The prizes are brilliant and numerous. Each shout of triumph stirs the sluggard and crazes the aspiring. Everything is, to the American who wills. Vanderbilt, who peddled cabbages in a scow, dies worth one hundred millions. And on Sunday the metropolis lowered its flags for Benjamin F. Wade, thrice Senator from Ohio, once navy on the Erie canal.

And what are the consequences of this contempt of rest ? We are a nation without contentment, without rest, without happiness. In a feverish race we pass from the cradle to the grave, successful men to whom life is a failure. Our boys leave the university when

English boys leave their school. Our merchants leave their trade, retiring to some more dignified or honorable work, as they believe it, at an age when the German merchant feels himself the master of his trade. We are always anticipating the future, forcing the task of a whole life into part. Worse, we are not content with doing a year's work in a month in our own calling, but we must do enough in all other callings to win distinction there. In other lands it is enough to be a lawyer, physician, clergyman, merchant. Here we are nobodies unless we fill the sphere of all human occupations. He must be a statesman, and know political science, as if already in office. He must be an orator, and ready to persuade and instruct: a wit, to shine at the dinner-table; a litterateur, a critic. There is too much human nature in man for this to mean anything except a discontented life and a premature death. And the remedy?

Correct public opinion. We must honor the man who faithfully does his task, whatever it be. Not the task, but the faithfulness with which it is done, must be the measure of the honor. Then men will be content with their father's house or their father's trade. This will give us that family association which is a sure pledge of good conduct and patriotic love. This will give us too that traditional aptitude which alone gives great mechanical excellence. It will not be a bad time for American manufactures when we find stamped on them what Mr. Griffis finds on Japanese bronzes, "Done by the ninth bronzer in this family." Then men will keep the occupation of their youth for their age, and having leisure, will build the foundations broad enough to withstand bankruptcy. Then men will seek excellence in their calling and not compete with the excellent in other callings. Then men will alternate labor with rest, and obey the law which God has written on creation; God, who himself rested after toil; God, who shrouds the earth with the night, that it may take its daily sleep; God, who speaketh to the torrent to stop at once amid its maddest plunge. Shall our countrymen—the men whom we know and love—alone defy this law? Shall they selfishly destroy a life which belongs to their families

and to us? Let us practice and preach that moderation even in good courses, which is the only wisdom."

Inebriety is another cause of insanity. Alcohol flies to the brain, and not unfrequently dethrones reason and leaves its victim an helpless idiot or a raving maniac. Drinking parents beget imbecile or insane children. Dr. Howe of Boston tells us that out of 800 inmates of an asylum there, he knew that 147 had drunken parents. In addition to deranging the mental faculties of otherwise perfectly sane persons, drinking develops tendencies to insanity that already exist. As there are grades in insanity, so there are grades between perfect mental soundness and insanity. Every one knows people who are "eccentric," "flighty," or "weak-minded." Alcoholic liquors readily affect such, and numbers of the inmates of our asylums are people of this class who have had the tottering balance of their reason completely upset by drinking. Many are driven mad by anxiety on account of losses and deaths caused by intemperance.

Insanity may result from excessive joy, grief, jealousy, homesickness, anger, religious excitement or delusions, dread of the future, fear of friends, of being poisoned, of losing wealth; from masturbation, excessive venery, sexual diseases; from epilepsy, softening of the brain, etc. The range of aberration is extensive. *Mania* is explosive, and the tendency is to raving, fury and madness. If the unsoundness is upon one subject only, it is termed *Monomania*, but there is not that degree of irritability and frenzy. The patient is generally melancholy, timid, sad, gloomy and unsociable, and only becomes excited or shows mental derangement in one direction. The alcohol disease (*Dipsomania*) is of this class; so is *Kleptomania*, an irresistible propensity to steal, and *Hypochondriasis*, a settled but erroneous belief that a mortal disease is slowly destroying the person. *Dementia* is a condition without mind, varying from imbecility to total loss of power of reasoning. *Idiocy* is confirmed dementia, with a complete obliteration of the powers of intellection. Many are born

in this condition ; in others it may develop from other forms of insanity or from diseases of the brain, as softening.

Generally the aberrations are slight at first, the person courts solitude, and is easily provoked or displeased when disturbed. The mental derangement may be suspected by peculiar expressions, actions or inclinations, by restlessness, sleeplessness, and by unnatural impulse.

TREATMENT.

It is impossible to come to any other opinion than that insanity is, to a large extent, a preventible malady ; and it appears to us that it is in the direction of preventing its occurrence, and not in the creation of institutions for its treatment, that any sensible diminution can be effected in its amount. Lunacy is always attended with some bodily defect or disorder, of which it may be regarded as one of the expressions or symptoms. We must, therefore, attempt to prevent its occurrence in the same way as we attempt to prevent the occurrence of what are called ordinary bodily diseases ; and if it be admitted that, to a large extent, preventable diseases exist among us in consequence of the ignorance of the people, it is clear that we can only convert the preventable into the prevented by the removal of that ignorance by a sounder education. To this, and not to any machinery, however good it may be for the treatment and cure of the insanity which has actually arisen, can we reasonably look for its diminution.

Dr. Choate observes on the same topic : "The more we see of mental disease in its various forms, the more we are convinced that the study of its *prevention* is infinitely more important than even the study of its cure, and that the dissemination of more correct views of the true way of living, and a more rigid observance of the laws of health and nature, would greatly diminish its frequency."

The majority can be cured if taken in time. The chances of recovery lessen with the duration of the disease and the approach of old age. It varies with the cause ; those cases originating in organic disease yielding the more readily to hygienic and medical treatment.

FALLING SICKNESS, FITS.—*Epilepsy.*

This is a disease of the nervous system and from the suddenness of the seizure, which fells the patient to the ground in convulsions, it has been termed *falling sickness*. Post-mortem examinations have thrown no light upon the conditions producing the attacks. Each organ has, in turn, been found affected and sometimes, strange to say, all parts of the body are discovered healthy. Cases are met with in which it is hereditary; in others, the causes of irritation are apparent; in some it arises from nervous debility; in others it is spontaneous or accidental. There is a sudden and complete loss of sensation and the patient falls to the ground; the head is turned to one side, the eyes upturned, the tongue protruded, and the face purplish and livid. The teeth grind and gnash and the tongue is frequently bitten, the blood mixing with the foam which collects at the mouth. The breathing is labored and hoarse, at times suspended with violent spasms of the limbs. This is the description of a severe but ordinary attack. Gradually the spasms abate and stupor or deep sleep follows. In from five minutes to a half hour consciousness is recovered. The person has no knowledge of what has transpired during the interim. Headache and exhaustion follow, but when these disappear the person seems as strong as ever. The attacks vary in degree. If slight, the person may fall, the jaws set, the eyes become fixed, the fists clench, and with a few tremors of the frame, recovery take place. Some do not fall but are only momentarily unconscious. From such as this to the epilepsy ushered in by a piercing scream, accompanied by severe convulsions, involuntary defections, and followed by days of furious *mania*, we have the various shades in which it is presented.

An interval of exemption follows the fit, but of uncertain duration. As the disease becomes more firmly seated, the system at the same time becoming more debilitated, usually the interval diminishes and the severity of the paroxysm increases. The disease may gradually pass away or result in idiocy.

Fits, like fainting, are "catching." We remember when a school-boy, a lad on our bench fell in a fit, his neighbor soon followed and a third. Our time was coming. But the principal boisterously declared he would flog severely the next boy guilty of such "foolishness," and bringing down his rule with great vehemence upon his desk, reassured us. This ended the scene, but we fancy that there was many a countenance

"Sicklied o'er with the pale cast of fear."

A paroxysm may be sudden and without premonitory symptoms; or there may be days or hours of headache, lassitude, irritability and depression, mental and physical. Sometimes there is a peculiar creeping sensation arising from the limbs to the head, which is called in medical parlance, *aura epileptica*.

Remarkable as it may seem, this disease is *feigned*. Hysterical epilepsy is more common than would be supposed. The principal object is to elicit sympathy. Once we were called to a church to save a young man "dying in convulsions." Studying the case a few moments we detected the fraud. The congregation was dismissed, the lights extinguished but one, and tapping the young man upon the shoulder we told him to "get up and put on his coat and hat as we wanted to lock up the building," and *he did so*. Our prescription should have been: R.—Horsewhip.

TREATMENT.

As a precautionary measure persons once experiencing an attack should studiously avoid elevated positions, such as scaffolds, ladders, the edges of roofs, boats, piers and precipices, proximity to fires, unless screened, and even stairways. Sometimes the first favorable report we receive is that the party *feels confidence* in going down stairs. The object of these precautions is evident. A wedge to which a string is tied made of leather, rubber, cork or wood, must be placed between the teeth to prevent mutilation of the tongue. The paroxysm may be treated the same as a convulsion, (see Convulsions,) or if nothing else can be done the patient should be restrained from injur-

ing himself. Methods of cure can only be effected between paroxysms. All causes of irritation must be removed. Among these may be mentioned rheumatism, gout, syphilis, scrofula, excess or perversion of organic change at puberty, pregnancy or dentition, tobacco, worms, sunstroke, overwork, emotional disturbances, excessive sexual communication and masturbation. The latter is a fruitful source of epilepsy. The remedial means will depend much upon the condition of the blood-vessels of the brain. The ophthalmoscope will decide the matter. If the arteries are congested use the Extract of Belladonna in one-fourth grain pills, every three or four hours at expected time of attack; at other times in one-eighth grain pills. If contracted,

R.—Bromide of Potash,		one ounce,
Bromide of Ammonia,		one ounce,
Water,		eight ounces.

Mix.

Dose, a teaspoonful three times a day. Tonics are also necessary. Dr. C. E. Brown-Sequard, the eminent physiologist, prescribes

R.—Iodide of Potash,		two drams,
Bromide of Potash,		two ounces,
Bromide of Ammonium,		two and a half drams,
Bicarbonate of Potash,		two scruples,
Infusion of Colombo,		six ounces.

Mix.

Dose, a teaspoonful before each meal and three at bedtime. When the patient's pulse is weak, substitute in above for bicarbonate of potash, sesqui-carbonate of ammonia, and for the six ounces of infusion of colombo, one and one-half ounces of tincture of colombo, and four and a half ounces of distilled water.

HYSTERIA.

This is a nervous affection, remarkable for the numerous forms it assumes and the number of serious maladies it simulates. There is

a diseased condition of the mind as well as of the nervous system, a greater susceptibility to emotions and an inability of the will to control them. In a very large proportion of cases, hysteria has been found to accompany organic disease of the uterus, ovaries, uterine irritation from functional disturbance, displacements of the uterus, leucorrhœa, etc. An attack is usually caused by mental anxiety or excitement, grief, disappointments in love, fits of anger, jealousy, etc. The nervous temperament, the precociously developed, and those brought up amid the excitements and luxuries of city life are most susceptible. The attack is sometimes preceded with fits of yawning, sighing and irrepressible laughter. *Globus Hystericus* is the name given to the most common form. There is difficult breathing and a choking sensation as if a solid ball were ascending from the abdomen to the throat, weeping, laughing, vomiting and palpitation of the heart. This generally passes off with sobbing, copious discharges of urine, followed by great depression of spirits. When the attack is severe, we may have some one or more of the following difficulties: Headache, gas in the intestines, with pain and bloating, obstinate vomiting, lancinating pains in the chest as in pleurisy, neuralgia, rheumatism in joints, paralysis of motion or sense, convulsions of the eyes, limbs or whole body, delirium or coma.

It is to be distinguished from most diseases which it may in its course resemble by the previous symptoms of weeping, laughing and the "ball" in the throat. A test in cases where pain, soreness, swelling, etc., are complained of, is, that firm pressure can be made without causing pain if the attention of the patient be diverted for a moment; when the thoughts are upon the part a feather has unbearable weight. In pleurisy a full inspiration is avoided, in hysteria the chest is expanded freely. In hysteria the respiration is natural, the pulse regular, the pupils respond to light and the patient is seldom totally unconscious. These symptoms are exactly opposite in the coma of apoplexy. In epilepsy or falling sickness there is no stricture in the throat, in hysteria, no foaming at the mouth; epilepsy is sudden and involuntary, hysteria comes on gradually and

the spasms are partly under control; in the former the patients injure themselves, bite the tongue, etc., in the latter seldom injure themselves.

It must be remembered that hysteria and organic diseases may exist at the same time. If so, the previous history will disclose the fact.

The indications are to stop the attack, remove uterine diseases, if any, and tone up the nervous system.

TREATMENT.

Opium, alcoholic stimulants, blisters, and all strong medicines are to be avoided, for all cases, if left to themselves, recover; even hysterical coma and convulsions terminate favorably. Perfect quiet is imperative. Most cases of "globus" hysteria recover in a few minutes by pouring cold water from a pitcher or spout upon the thigh, abdomen or head. Pouring upon the head is good treatment in all the forms of this disease, even in coma. After the paroxysm is overcome the nervous system can be effectively quieted by the following :

R.—Fluid Extract of Valerian,
 Fluid Extract yellow Lady-slipper,
 Aromatic Spirits of Ammonia, . . equal parts of each.
 Mix.

Take a teaspoonful in a little cold water every fifteen or thirty minutes until relieved, then every hour or two. The cause, whether uterine disease or not, should then be sought for, and as far as practicable, removed.

Catalepsy is called a fit because it occurs in paroxysms. It is a kind of hysteria, and like it, greatly dependent upon uterine disease. There is complete and sudden suspension of consciousness and of volition. The rigidity of the muscles during an attack is remarkable; the body and limbs retain any position that may be given them, no matter how apparently uncomfortable or painful.

Trance is long continued insensibility. Sometimes the person will swallow food put into the mouth, at other times will not. Some

open the eyes and see and know all that is going on about them, although they cannot move or speak. Others may be unable to do even this, and yet sense sounds. Both these and the cataleptic are liable to be buried alive. In either case the treatment consists in tending to the wants of the nervous system, and are managed in about the same way as hysteria.

SAINT VIRUS'S DANCE.—*Chorea*.

This is a disease of the nervous system occurring in the young and manifests itself at first by involuntary twitchings of the muscles of the face or arms. Usually other muscles soon become involved and it may involve one-half or the whole body. The contractions may twist the body into a variety of attitudes, throwing the arm forward or backward, turning the hand over and suddenly reversing it. The legs may be twisted in, or everted, or thrown suddenly across each other; and even in attempting to walk, the intended slow movement may become a rush and a jump. The face may be contorted and mouth twisted. The patient is annoyed by the condition and shrinks from observation. They often cease entirely during sleep. It occurs most frequently in girls and between the ages of eight and eighteen.

The indications are to relieve all irritations, such as wounds, stomach affections and worms in the bowels, bloodlessness, and the want of tone in the nervous system.

TREATMENT.

The cause, if discoverable, must be removed. If worms, they must be expelled. If anæmia or bloodlessness, a cathartic followed by stimulating tonics and iron will go far towards effecting a cure. A remedy that will meet the majority of cases is a tea or syrup made from the yellow Lady-slipper.

LOCKJAW.—*Tetanus*.

This disease results from a wound. This injury seems to spend its greater force upon the lacerated nerve or nerves and through this

system the whole frame becomes involved. The appearances, however, being confined chiefly to the muscles which are contracted and rigid, would indicate that they alone are affected. The magnitude of the injury is in no proportion to the severity of this malady. A blow which will affect the flesh to a considerable extent may occasion it, and it has been known to develop from so slight a cause as pricking the finger with a tack. In horses it is frequently developed by a nail puncturing the foot. From a sense of soreness about the wound there quickly follows a stiffness of the contiguous muscles. This rigidity progresses towards the head, including all the muscular structure in its advance. Soon the neck and face are involved, and although consciousness is retained to the last, the countenance has a ghastly appearance. The jaws in turn are locked fast, swallowing is impossible, the pain extreme and the whole body rigid.

The indications are principally to overcome the tension or rigidity and allay the intense irritation of the nerves at the seat of injury; secondarily to heal the wound if extensive.

TREATMENT.

If means are employed before the neck and jaw are involved, the chances of success are much more favorable. The patient should be put to bed and the spirit vapor bath administered. Internally should be given the tincture gelseminum in ten-drop doses at intervals varying from a half hour to two hours, until complete relaxation ensues. About the injury and including much of the surrounding part, should be applied a slippery-elm poultice which is thoroughly saturated with equal parts of laudanum and tincture aconite root. This allays pain and irritation; the opium acting as an anodyne and the aconite as a *benumber*. This treatment should be continued for several days. It must be remembered that the aconite is a poison, and if the surface is much lacerated a strong solution of carbolic acid may be applied by a compress covered with tin-foil or oil-silk and a bandage. The poultice just alluded to may then be used as advised.

If the jaws are locked at the time of beginning treatment and the

patient can swallow, tinctures lobelia and capsicum combined with a little water may be poured into the mouth between the cheek and the teeth. It will find its way into the stomach. Doses of this mixture should be repeated until free vomiting and relaxation. If swallowing is impossible the lobelia compound should be passed into the rectum. The room should be kept dark and all noise in and about the house avoided. In cities a layer of bark should be laid in the street. All draughts of cold air must be excluded. The touch of a cold hand may provoke a spasm. Food can be given in fluid form, but must be warm. A general opinion prevails that cases of this nature are incurable, but we feel confident that by the treatment here recommended a majority may be successfully relieved.

CONVULSIONS.—*Clonic Spasms.*

By this term we understand "alternate contractions and relaxations, violent and involuntary, of muscles, which habitually contract only under the influence of the will." They occur at any age, but more frequently in children. A supersensitiveness of the nervous system in the young and debility in the adult, predisposes to attack. It can hardly be considered a disease of itself, but is rather a symptom of disease. Some point or points become the seat of irritation, which is reflected back to the spinal cord or brain when spasm or tetanus proceeds. *Tremor* is of this nature, but light; lock-jaw is a permanent spasm. Most people are aware of the danger of death to horses from lock-jaw when a nail has entered the foot. The irritation beginning in the foot culminates in the brain. So in the subject under consideration. Particular attention is directed to this matter in order that in every case of convulsions, the cause may be ferreted out and removed. This is not always practicable, as when the blood is poisoned with malaria and a child is taken with convulsions at the inception of a fever. But when arising from the presence of worms, indigestible food, retention of urine, surface irritation, teething etc., attempts to avoid the convulsions are almost fruitless, unless the local difficulty is abated.

Convulsions accompany some of the diseases of adult life, such as chorea, or St. Vitus's Dance, epilepsy, Bright's disease of the kidneys, hydrophobia, hysteria, and the parturient state. We treat of these under their proper headings.

The premonitory symptoms of infantile convulsions are sometimes called *inward fits*. They demonstrate the presence of irritation. There are twitching of the arms or legs, drawing down the corners of the lips, the half-opened eyelids, upturned eyes, grinding of the teeth, and sudden starts. The convulsion comes suddenly, with unconsciousness, agitation of the limbs, flushed or purplish face, fixed or rolling eyes, and the head thrown back.

TREATMENT.

We have been in the habit for years of administering by the mouth, or between the teeth, if the lips are set, one-half a teaspoonful of

R.—Chloroform, ... one dram,
Compound Spirits of Lavender, . . one ounce.

Mix.

And with the happiest results. Perhaps the use of chloroform by inhalation may be as good. A half-teaspoonful is poured upon a folded napkin or cloth, and held about one inch from the nose, allowing the admission of fresh air with the vapor of the anæsthetic. Infants are placed in a warm bath and cold packs placed upon the head, if the head is hot. It is a good plan to remove the clothing, or, at least, all constricting bands. Lobelia is a remedy that will meet all ages. When the convulsion is over, seek out and remove the cause.

NINE-DAY FITS.—*Trismus Nascentium*.

These occur in children under two weeks of age, as the name implies. The cause can always be traced to irritation of the cord. This may arise from rubbing or from wet or filthy dressings to the umbilicus or navel.

TREATMENT.

Apply to the spine a small strip of cotton wet in chloroform. . This

stops the spasms, and when the smarting from the chloroform ceases, the child will sleep. Cleanse the cord and parts surrounding with soap and water, see that the clothes are dry, and spread on an old piece of linen some antiseptic ointment, and secure it with adhesive strips. This should be removed and new applied as often as it becomes wet. If the diet is bad, take steps to furnish one more wholesome.

PALSY—PARALYSIS.

Palsy is the partial or complete loss of voluntary motion, with or without that of sensation, in any part of the body. It may be local, as in dropped wrist from lead poisoning, or excessive sweeping, or hand gardening, by those unaccustomed to such work. Another illustration of local paralysis is *Bell's Palsy*, in which one-half of the face is motionless and atrophied, the other half being plump and expressing the emotions naturally. A common form of paralysis is when one-half of the body is involved; if it is the upper or lower half it is termed *Paraplegia*, if either side, *Hemiplegia*. A disease of the nerves shown in constant tremor is called palsy, *shaking palsy*, *trembling palsy*. Tremor is a more proper name. It is observed in the infirm, debilitated and aged; also, in hard drinkers, those using narcotics, and workers in particular minerals. The hysterical are subject to a temporary but incomplete paralysis. It comes suddenly, with some powerful emotion, and the motions of the muscles of the face and of the tongue are unimpaired. In walking, when the palsy is pretty complete, the leg is drawn along as if lifeless, sweeping the ground. It is not swung round, describing the arc of a circle, as in ordinary hemiplegia.

Palsy accompanies diseases of the brain, pressure upon its substance, affections of the nerves, muscles and poisons chiefly mineral. It occurs more frequently in the apoplectic and epileptic, and, like these maladies, is likely to recur. The paralytic stroke is sudden but not always so: palsy following compression by tumors or in softening of the brain is gradual and progressive. The premonitory symp-

toms when present are flushed face, swelled veins of the head and neck, dizziness and headache. When gradually increasing, imperfect articulation, loss of memory and speech, inability to protrude the tongue in a straight line and the corner of the mouth drawn down or one half is drawn towards the healthy side. Numbness is also a symptom. When the spinal cord is injured or there is hemorrhage in the cord, all the body below the point of injury is palsied. At the small of the back there follows a staggering gait and sometimes walking and even standing are impossible; the urine and excrement are passed involuntarily. At a higher point digestion and respiration are disturbed and labored, and still higher, the arms fall motionless.

It is distinguished from apoplexy by its occurring sometimes without coma and by immobility being more permanent, while in apoplexy there is coma, which is followed by a gradual restoration of the power of motion. In apoplexy and softening of the brain paralysis is, and in fact always is, a symptom of disease at head-quarters. In shaking palsy the trembling is regular and rythmical; in chorea the movements are irregular and jerky.

TREATMENT.

Not all cases are amenable to medicinal influences. In sudden strokes, keep the head high, the feet low and warm. To relieve the congestion of the head and diminish the volume of serum (water of the blood) take

R.—Podophyllin, ... two grains.

Cream of Tartar, ... two drams.

Mix.

Make into four powders after thorough mixing and give one every two hours until free operation. The bed-pan should be used. Smelling salts (ammonia) and emetics are dangerous and must not be employed. Phosphorus and strychnia are the special remedies for all forms of palsy. We doubt if the following pill can be excelled, if equaled.

R.—Phosphorus, ... one grain,
Extract of Nux Vomica, ... twenty-five grains.
Mix.

This, with the addition of a fatty menstruum, will make one hundred pills. The dose is one, two or three after meals (one or all) and never upon an empty stomach. The results are remarkable. An alterative and tonic will also be of service. Electricity is valuable, properly applied, which *it is not* one time in ten. The management of paralysis following such a condition is foreshadowed in the essay upon softening of the brain.

NERVE-PAIN.—*Neuralgia*.

Neuralgia is a common term signifying pain in a nerve. It is sharp, sudden, piercing, or lancinating, alternately ceases and reappears, and follows the course of a nerve and its branches. But few of the sensory nerves seem to be exempt. It attacks the nerves distributed to the forehead and temple, the cheek and eye, the teeth and jaws, the arm, the heart, the ribs, the stomach, the liver, the kidney, the testicle, the leg (sciatica), and other parts. Hemicrania of the head, angina of the heart and sciatica of the hip joint and leg we have discussed otherwheres, (see Index). It is experienced by the strong and full-blooded (sthenic), as well as the feeble, delicate and anæmic (asthenic). Among the latter it is most frequent, particularly if inhabiting malarial districts. By many people neuralgia is called rheumatism, and it is sometimes difficult for a physician to distinguish between the two. In the jaws it may be mistaken for tooth-ache and many sound teeth have been extracted without relief. Nursing long continued and consumption induce neuralgia of the ribs (intercostal). Exposure to cold and damp produces neuralgia of the back and testicle, and sciatica among the laboring classes. Neuralgia arises from dyspepsia, from uterine disease, and from other organic affections; often it is due to irritation and may be sympathetic.

TREATMENT.

From a moment's consideration of the many conditions in which neuralgia appears and the many causes which produce it, it is evident that the only way to eradicate it is by a thorough course of medication which will correct every abnormality of the system and its fluids. That it is obstinate, all physicians declare, and particularly so when it runs in the family or is hereditary.

To relieve the pain it may be necessary to give morphine or inhale chloroform. We would not advise either until local means had been exhausted. If the surface is cold, apply a hot compress; if hot, apply ice water. Whichever increases the pain lay aside and use the other. Sometimes only by trial can this be ascertained. For a beginner, we prefer

R.—Tincture of Aconite root,
 Tincture of Arnica flowers,
 Laudanum, . . . equal parts. Mix.

Apply to seat of pain on cotton or Canton-flannel disk and cover with oil-silk or rubber-sheeting. Secure with bandage. Chloroform may be used in the same manner, holding the disk until the burning is unbearable; or oil of peppermint. We believe nothing is gained by burning or blistering. If local heat relieves, apply the rubber bag filled with boiling hot water, to the back; to the lower part of the spine, if the pain is in the abdomen or legs, and between the shoulder blades if the neuralgia is in the head or chest.

Many and various are the remedies recommended for internal administration, and with results almost universally unsatisfactory. The reason is obvious; neuralgia, like many other affections, is treated by name and not according to the remote or exciting causes, the controlling influences and the *peculiar and special condition of the individual*. Some of these will now be noticed. If the person is robust:

R.—Tincture of Gelsemium, . . . one ounce,
 Essence of Wintergreen, . . . one dram,
 Water, . . . four ounces.
 Mix.

Give a teaspoonful every hour. If constipated, or the saliva is acid, give calcined magnesia, a teaspoonful in sweetened water every six hours until free catharsis. If rheumatic and the urine is scanty and dark-colored,

R.—Tincture of Colchicum Seeds,	four drams,
Spirits of Nitre,	three drams,
Acetate of Potash,	two drams,
Essence of Wintergreen,	one dram,
Water,	three ounces.

Mix.

Take a tablespoonful every two or three hours. If bloodless, (anæmic) with cold feet and hands, a foot bath and

R.—Tincture of Gelseminum,	thirty drops,
Chloroform,	one dram,
Compound Spirits of Lavender,	one ounce.

Mix.

Take a teaspoonful every hour in a little water. From nervous exhaustion, excessive mental labor, deficient nerve power or feebleness and impaired circulation,

R.—Phosphorus,	one grain,
Extract of Nux Vomica,	twenty-five grains,
Fat,	sufficient quantity.

Mix.

Make one hundred pills. Take one after each meal. Electricity is also beneficial.

When malarial or intermittent or recurring at regular intervals,

R.—Podophyllin,	six grains,
Leptandrin,	twelve grains,
Iridin,	two grains,
Extract of Dandelion,	sufficient quantity.

Mix.

Make twenty pills and take one night and morning. If asthenic use instead

R.—Quinine,	.	.	.	.	.	two drams,
Morphine,	.	.	.	.	.	three grains,
Strychnine,	.	.	.	.	.	two grains,
Arsenious acid,	.	.	.	.	.	three grains,
Extract of Aconite,	.	.	.	.	.	twenty grains.
Mix.						

Make sixty pills and take one every two or three hours, at the same time keeping the bowels regular by diet or calcined magnesia. When face is pale, eyes dull, pupils dilated, there is no better remedy than the extract of belladonna in one-fourth grain pills, as noticed in essay upon headaches.

From what has been said it is evident that not only does the treatment vary with the individual but it may require change in the same patient with the same neuralgia under different conditions or circumstances. Diet and other hygienic means are, of course, not to be disregarded.

FACEACHE.—*Tic Douloureux.*

This is one of the most common forms of neuralgia and not unlike other forms seems to have but little effect upon the duration of life. The pain passes to the cheek, lower eyelid, upper lip and side of the nose, sometimes to the forehead and upper lid and the eyeball. In dental neuralgia the lower jaw is affected, the teeth, gums and tongue. The face or eyelids twitch and frequently become red and swollen and painful to the touch. The pain is interrupted and intermittent, face flushed or pallid, tongue coated, bowels constipated, appetite poor and rest and sleep disturbed. The face may ache between paroxysms. If the teeth are involved no particular one aches, but all on one side in either the upper or lower set are painful. May have headache. Sometimes the eye becomes bloodshot, tears are copious and flow down the cheeks, or the saliva is increased in quantity. The pains may migrate from the forehead to the cheek or lower jaw and occasionally one side of the head is left and the other attacked.

TREATMENT.

A general outline of treatment has just been given. But little further need be said of the particular form under consideration. If the teeth are decayed, have them extracted, but if not and they are painful, fill the mouth with hot or cold water, whichever affords relief. After oiling the hair, the whole head may be wrapped in hot towels or blankets, renewing frequently. For other local and general management, see treatment of neuralgia above given.

NEUROMIMESIS.

This is a form of nervous disorder in which the patient imitates, or rather mimics, a disease, medical or surgical. One most common is neuralgia of the breasts. The slightest touch cannot be borne; even the slightest brush of a feather causes pain. If, however, the mind is diverted to some subject or object that will be deeply interesting, the gland can be roughly handled without pain or notice. We shall never forget a chronic case of feigned rheumatism of the joints of the hands. The hand was emaciated, but the joints remained large, probably from continuous manipulation. When "the pain ran up the arm" the member was treated to a mustard plaster its whole length. This was allowed to remain until extensive blisters arose. One of the compounds of potash had been taken for years. No difference in the feelings was observed, whether the finger was carefully moved or the whole hand abruptly, but *accidentally*, jostled. To relate her experiences was a favorite theme, and during the rehearsal, the hand could be cautiously grasped with some force without pain.

STAMMERING—STUTTERING.—*Balbuties.*

In "Crabb's Synonyms" these terms are thus accurately defined: "*Stammering* and *stuttering* are confined principally to the useless moving of the mouth; he who *stammers* brings forth sounds, but not the right sounds, without trials and efforts; he who *stutters* remains for some time in a state of agitation without uttering a sound. Children

who first begin to read will *stammer* at hard words : and one who has an impediment in his speech will *stutter* when he attempts to speak in a hurry." They are more a habit than a disease, and are easily corrected. A correspondent to the "Chicago Medical Times" narrates his plan and experience, here introduced, in overcoming

Stammering : " Go into a room where you will be quiet and alone. Get some book that will interest but not excite you, and sit down and read two hours aloud to yourself, keeping your teeth together. Do the same thing every two or three days, or once a week, if very tiresome, always taking care to read slowly and distinctly, moving the lips but not the teeth. Then, when conversing with others, try to speak as slowly and distinctly as possible, and, make up your mind that you will not stammer.

Well, I tried this remedy, not having much faith in it, I must confess, but willing to do almost anything to cure myself of such an annoying difficulty. I read for two hours aloud with my teeth together. The first result was to make my teeth and jaws ache—that is, while I was reading—and the next to make me feel as if something had opened my talking apparatus, for I could speak with less difficulty immediately. The change was so great that every one who knew me remarked it. I repeated the remedy every five or six days for a month, and then at longer intervals until cured."

Another plan is to restrict yourself for three or four days to absolute silence ; then, with each expiration of the breath pronounce distinctly, first vowels, then consonants, then syllables, and at the end of the week, sentences. Continue this, only increasing the speed with great caution, ceasing and resting for a few moments when a mistake is made, until fluency is obtained.

Stuttering is mastered by what is called physiological treatment. The "Scientific American" says : "Very great success is reported as attending the treatment of *stuttering* by purely physiological training, according to the system of M. Chervin, of Paris. Three types of *stuttering* are distinguished : First, that occurring during inspiration ; second, *stuttering* during expiration ; third, *stuttering* during

both these periods, and between breaths. The treatment is divided into three stages. The first involves various respiratory exercises, during which the pupil is first taught to make a long, full inspiration and follow it by regular, forcible expiration. Then the respiratory movements are made with various rhythms until they become full, regular and easy, instead of being jerky, labored and fatiguing. In the second stage of treatment, exercises with vowel sounds are substituted for the previous mute breathings, giving to each vowel the various modifications of tone, pitch, duration, etc., heard in conversation. The third stage comprises exercises on consonants, alone and in combination with vowels; at first slowly, then rapidly, varying the duration and pitch of each syllable, and passing from words of one syllable to those of two and more. Prepared by these exercises, the pupil learns to articulate slowly and methodically short sentences, then longer periods and paragraphs, separating sentences, and always beginning with a deep inspiration. Twenty days of this treatment usually suffice for a perfect cure."

ORDER II. DISEASES OF THE EYE.

The eye is one of the most delicately constructed organs of the body; it is laid in fat and protected on all sides, but its anterior aspect, by bone. So important is the sense of sight that any disease affecting the eye causes not unreasonable alarm and hastens us, as indeed it ought, to consult a good physician. What we have to say in this matter is necessarily limited in a work of this nature and meant chiefly to draw attention to possible results as well as to assist, to a limited extent, those beyond the reach of medical aid, or with affections so slight as to be successfully relieved by personal efforts. The diseases involving the internal structures are always serious; so we confine our remarks to those of the lids and conjunctiva. This will include about half of the cases met in practice. Inflammation of the eye differs in no respect from inflammation in other parts of the body, and, in general, needs the same treatment. Filth is the cause in many instances. Cleanliness, pure air and good food are as necessary as medicine. When mucous or purulent discharges occur care almost constant is necessary to keep the organ free from the least accumulation.

INFLAMMATION OF THE EYE.—*Ophthalmia, Conjunctivitis.*

A delicate mucous membrane covers that part of the ball of the eye that can be seen and is reflected upon the inside of the lids. Kept continually moist it allows the lids to move and the eyes to turn without friction. When this inflames it becomes red, painful, the lids swollen with red edges, and there is great intolerance of light. During the night the eyelids are glued together by the mucous discharge. The subject turns from the light, keeps the lids closed or the face

covered with the hand or seeks the dark. There is an unpleasant feeling, as if dust was in the eyes.

Such a condition as we have described may result from cold, from substances getting in the eye, burning by hot cinder and from blows. The lids should be frequently bathed with hot water, and, in the meantime, a wet but light compress bound on. In the morning bathe the lids until the glue softens and permits their easy separation.

The disease may not stop here but increase until a mucous catarrh is produced. This is continually discharged, and overrunning the cheek, inflames the skin. The eye is more sensitive to light and upon separating the lids with the thumb and forefinger, the confined mucus escapes. The mucus may become thick and purulent. This is the more likely to follow in the scrofulous and syphilitic, when the matter comes from another eye similarly diseased, or in the newborn who first open their eyes in the discharges of the mother. The pain and inflammation are greater, the lids more red and swollen, are puffed up by the imprisoned pus, the blood-vessels are enlarged and readily seen when the eye is open, although for the most part they are kept closed. The danger is now extreme, pustules or *ulcers into the cornea* may form, and the result be permanent loss of sight or destruction of the eye.

TREATMENT.

In catarrhal and purulent ophthalmia constant care is necessary to keep the eye free from matter. It is *poisonous* and must be so regarded. *It will give the disease to others by contact* or will involve the well eye if but one is affected. All cloths used for washing or compresses must be burned upon removal. Brushes and towels must be handled with care and thoroughly washed in hot water containing sulphate of zinc or carbolic acid.

R.—Carbolic acid,	.	.	.	.	.	four grains,
Sulphate of zinc,	.	.	.	.	.	eight grains,
Fluid extract of Golden Seal,	.	.	.	.	.	two drams,
Water,	.	.	.	.	.	four ounces.
Mix.						

Dry the lids and cheek and having dipped the ends of the thumb and forefinger in pulverized resin to prevent slipping, separate the lids with a camel's hair brush dipped in the above: wash the ball every two hours. If possible raise the lids and sweep under them. Keep a piece of lint or compress of cotton moistened with the same constantly over the eye. If the fear of light is so great that this cannot be done chloroform must be used by inhalation.

GRANULAR LIDS.—*Trachoma*.

The inner surfaces of the eyelids, from the above disease and other causes may become covered with little fleshy elevations or excrescences looking much like fish eggs. They keep the color of the membrane, but when the upper lid is everted look pale or purplish. They inflame the eye by their scratching. The flow of tears and mucus is increased, but as the inflammation abates, is diminished. The vision is cloudy and sensitive. Drooping lids are often the result of granulations.

TREATMENT.

The profession agree that caustics are necessary for their removal. The sulphate of copper, carbolic, nitric or salicylic acid is employed. The elevations are carefully touched with some one of these, either in powder or solution, allowed to remain half a minute and then washed off with a fine brush and water. In about a week the operation is repeated.

OPACITY OF THE CORNEA.

At the front of the ball of the eye is a transparent but hard coating which is named the Cornea. It lies just behind the mucous membranes and is separated from the colored membrane, the Iris, by a watery fluid technically termed the *aqueous humor*. The Cornea is subject to inflammation, to irritation from granulations and ingrowing eye-lashes and to ulcerations as we noted when speaking of ophthalmia. When inflamed fibrous matter is deposited, it

gives it a milky "ground glass" appearance and cuts off the light from the eye. When this opacity does not involve the whole cornea the person is only partially blind, having lateral vision. Objects exactly in front of the eye cannot be seen, but may be distinguished if held to one side. Vision is interfered with in proportion to the density of the deposit or its extent. This opacity must not be confounded with *cataract*, which is *opacity of the crystalline lens*. This lens lies behind the *pupil*, the circular opening in the Iris. In health it is perfectly transparent, in cataract it is opaque and can be seen behind but close to the pupil. The blood-vessels of the eyeball are usually enlarged in corneal opacity and can be plainly seen ramifying through its substance.

TREATMENT.

The ball of the eye must be frequently brushed with the sulphate of soda dissolved in water, as much as it will take up. It may be used in powder form; in either case its use must be continued for weeks, perhaps months. We have seen cataract benefited by the long continued use of phosphorus in minute doses. Usually it is removed out of the line of vision by the surgeon.

AMAUROSIS.

This is "impairment or loss of sight from disease of the retina, optic nerve, or part of the brain with which the optic nerve is connected. If the retina only be affected, it cannot receive the impression which should be transmitted by the optic nerve to the brain; if the optic nerve only be affected it cannot transmit the visual impression from the retina to the brain;—if the brain alone be affected the sensorial power to take cognizance of the visual impressions transmitted by the optic nerve is lost. The result is the same whether the different parts of the optic nervous apparatus be affected together or separately. The symptoms are very various and inconstant. Amaurosis must not be considered as a special disease, but merely a symptom of different affections of the optic nervous apparatus.

Each particular case must therefore be specially studied by the physician in reference to its causes, diagnosis and treatment. For this purpose, exploration of the interior of the eye by means of the ophthalmoscope is necessary."

COLOR-BLINDNESS.

"Cases occur and that more frequently than is generally supposed, in which persons are unable, in different degrees, to distinguish certain colors, their sight in other respects being natural. The colors most generally confounded are red and brown with green, and pink with blue. Yellow and blue are generally readily distinguished by the color-blind.

The affection appears to be in most instances congenital. Acquired color-blindness, however, sometimes presents itself as a symptom of incomplete amaurosis. Yellow discolorations of the humors of the eye I have found do not interfere with the correct perception of colors.

Color-blindness has been met with much oftener in males than in females. It runs in families and like other hereditary complaints, sometimes overleaps one generation or more.

The most practical disadvantage attending it is the possibility of confounding red and green signals on railways or at sea, a mistake which might entail most disastrous consequences.

Congenital color-blindness is incurable. One method by which the false judgments of the imperfect sense may be corrected is the *comparison of doubtful with known colors*, by carrying about a chromatic scale, accurately tinted and named. This however is available only to a limited extent—that is as far as the colors of the scale itself can be distinguished."—(Jones)

OPHTHALMIA TARSI.

The edges of the eyelids are subject to chronic and obstinate inflammation. They appear red continually and on account of the

itching, are rubbed with the handkerchief and finger nails, which retards recovery. The lids become agglutinated during the night. Scales sometimes form along the borders of the lids and at times the lashes fall out.

TREATMENT.

This is usually unsuccessful because the discharge adheres to the roots of the lashes and forms crusts which prevent remedies from gaining access to the inflammatory part. The quickest mode of cure is to remove all the hairs. Each may be extracted in turn by a jerk, using the forceps to get a single but good hold. Two or three removals, at intervals of two weeks, are necessary. The hairs grow again very quickly and in about six weeks attain their normal growth. After removal, the lids may be brushed morning and evening with the carbolic acid, zinc and golden seal mixture just given.

Ingrowing eyelashes are the source of great annoyance to some and should be removed in the same way. They inflame the eye and may produce opacity of the cornea.

STYES.—*Hordeolum*. These are little boil-like tumors, located upon the edge of the eyelid. Treat by bathing the edges of the lids with tincture of myrrh and water, equal parts. Apply a compress wet in the same at night.

Watery eyes may result from obstruction of the tear duct, a tubule which carries the tears into the nose, or from overflow of the duct and lower lids, as by the introduction of foreign substances into the eye, diseases of the stomach and dissipation. It is usually a sign of debility. The system needs attention. Subdue inflammation about the eye or lids.

MALPOSITION OF THE EYES, SQUINTING, CROSS-EYES.—*Strabismus*.

This is sometimes congenital and sometimes acquired by imitation. There is a want of the natural parallelism in the position and motion of the eyes. Sometimes both eyes squint, but not at the same time. The internal muscle of the eye is the usual offender. It is shorter and stronger than its opposite.

TREATMENT.

This unsightly deformity is sometimes amenable to cure by educating the weak eye to take its proper place. Cover the sound eye and look steadily at an object. Then remove the cover. The eye will diverge. Repeating this operation for some time each day it will be observed that gradually the divergence diminishes. The surgical operation consists of the complete division of the shortened muscles. It is a quick and almost painless method of removing a striking deformity.

FOREIGN BODIES IN THE EYE.

Fine dust that will float in the atmosphere will become moistened and collect in the corner toward the nose where it can be removed by the finger-tip. Sand and cinders are more obstinate, do not soften with moisture, and hence each particle must be separately removed. They will be found upon the ball or lid. The motion of the upper lid causes their sharp edges to cut and scratch both the lid and the ball. Pressure upon the lid, while it relieves this motion, fastens the object more firmly in the delicate tissue. The lower lid can be easily everted by placing the finger upon the cheek just below the lid and drawing downwards. A fine brush or camel's hair pencil drawn across it will usually sweep them out; if this does not remove all the particles, those remaining should be disturbed by some sharp instrument, like the blunt end of a needle, and the brush again be used.

Most particles collect under the upper lid. This lid should be folded in two upon itself, the lower half turned over and resting upon the upper. To accomplish this have the person look at the ground just in front of him. With a knitting-needle, a round stiff piece of wire, a lead pencil, or some such thing, apply slight pressure along the middle of the lid. With the other hand grasp the eye-lashes, which will separate easily from those of the other lid, and turn the lid over. Withdraw the article used for pressure: the lid will remain turned outwards, the particles may be easily seen, and can be removed as above described.

Steel points, emery, and the like, which are thrown with much force against the eye, usually penetrate the membrane, and are with difficulty removed. In the case of the former, the load-stone is the best instrument for removing them. In the latter case, they should be immediately removed by the point of a needle, holding the lids apart with the thumb and fore-finger. Great care must be taken lest the eye be injured by a jerk or other sudden movement of the patient. Some parties are unable to keep the ball quiet while undergoing this operation. Under such circumstances a physician should be consulted and an anæsthetic administered. Bodies penetrating beyond the cornea require the surgeon's care.

When a piece of lime enters, it should be removed instantly, and the ball be thoroughly washed. This is the more important if the lime is unslaked. The wash should consist of simple water or be slightly acidulated with vinegar, which is better.

SMOKERS' EYES.

Inveterate smokers have the pupils of the eyes very much dilated, and always more or less pain in the eye, luminous specks, bright images, etc.; when reading the lines dance; after looking at a bright light an image of it often remains for a few minutes. These symptoms gradually disappear when the smoking is stopped. As the particles of smoke impinge on the eye, they cause a very disagreeable feeling in non-smokers, and even smokers are seen to close their eyes against it. Now, as the smoke comes in contact with the eye it is absorbed by the moist ball, and the nicotin of the tobacco is carried into the eye. It is this nicotin that causes the dilatation. It partially paralyses the muscular fibres of the iris, so that they cannot contract and reduce the size of the pupil, so it may adjust itself to different amounts of light. Where the light is low, little harm is done; but in a bright light, the eye may be seriously injured. Those who value their eyes should not smoke.

PROTECTION OF VISION.

A *resume* of foreign authorities on the preservation of eyesight lately appeared in the *Journal of Chemistry*:—

“For the worker the light should come as much as possible from the left side, that is to say, from the side towards which one turns in working. Daylight is the best; but direct sunlight and that reflected from mirrors should be avoided. The aspect should be northern and the light should come a little from above.

White walls should be avoided; highly varnished tables and in work-shops shining articles like silk should be protected from the sun's rays.

Artificial light is always bad, on account of the heat and the exhalation of carbonic acid. The best is that of lamps fed with vegetable oil (much used in France, but seldom in this country) and furnished with a glass shade. Gas is bad because of its heat, brilliancy and mobility; the light of mineral oils is too hot; that of candles insufficient and flickering. The eye of the workman should avoid the light coming to him directly or diffused through the room.

Working immediately after meals is objectionable; also uninterrupted use of the eyes for long periods of time. One should write on an inclined plane and not keep the head bent down more than is absolutely necessary. Reading in bed is bad every way.

Some good authorities commend washing the eyes with cold water, but the majority of the best ophthalmologists advise the use of hot water for the less serious affections of the eye. For tired eyes we believe, from our own experience, that water, hot as can be borne, is refreshing and beneficial.

If the eyes are fatigued by bad artificial illumination, blue or slightly smoked glasses will be useful, and in order to avoid the lateral rays they should be large and round.

If the irritation of the eyes persists, all work must be abandoned and an examination made to see if there be any disturbance of refraction, of power of accommodation, or of the mobility of the eyes.

Presbyopia, or so-called 'far-sightedness,' supervenes earlier with those who are constantly at work than with other individuals, and as soon as it does convex glasses should be at once resorted to, without which the muscle of accommodation would be fatigued to no purpose. At first they should be used for working in the evening after the fatigue of the day; but a long-sighted person should only use spectacles for looking at near objects, not at far ones.

Work requiring close application favors the development of *myopia* or 'near-sightedness,' precisely as the conditions of illumination are bad. If the action of those causes continues, the myopia will increase until vision is lost.

A slight degree of myopia may be favorable to such work; but, as a general rule, work requiring close application, by the derangement of circulation that it inevitably produces in the eyes, is much more injurious to the myopic, and is the great cause of the development of myopia and its complications. Young people should be examined, and, if they are myopic, hindered from undertaking tedious studies, and all professions demanding close application of the eye."

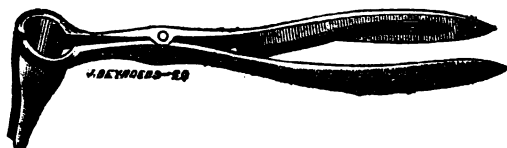
Dr. Spaulding, who has made a special study of defective vision in school-children, says :

"The only place to teach children how to use their eyes well—how not to abuse them—is *at home*. They should be taught that the light should always come from the side, or even over the shoulders; that the book should be held up, if possible, and never in the lap; that they should always have a shade over a lamp standing on a table at a level with their eyes, and especially if they have to face the light, as in writing; and that all bending positions, and reading in the twilight, or with the sunlight pouring over the book, are very harmful to the eyes. It is wrong to accuse the schools as the sole cause in all cases of short-sight. Hereditary influence I believe to be of great effect in causing short-sight; while bad light at night at home, poor light in the school rooms, want of care in selecting well-printed books, urging girls too much to do fine sewing and embroidery, too long-continued and unrested work at school, too strong glasses given

by opticians, and many bodily ails and weaknesses, as scarlatina and measles, are other factors, always busy in producing and continuing short-sight, all of which may, with care and thoughtfulness, be to some extent, obviated, and naturally at no better time than during the years at school."

ORDER III.—DISEASES OF THE EAR.

THE diseases of this important organ are numerous, few of them however being amenable to domestic treatment. For a better understanding of its anatomy and pathology the ear is divided into three parts, called the internal, middle and external ear. The portions that more particularly concern us are the internal and external. From the pharynx (throat) is a canal called the eustachian tube which terminates in the internal ear and tympanum or drum of the ear. The external ear consists of the trumpet shaped organ upon the side of the head with which we are so familiar and the canal leading directly into the head about an inch in length and covered at its end by the tympanum or drum. In most persons the drum can be seen if the observer will straighten the canal by gently pulling the ear upwards and outwards. The physician generally uses for the purpose a polished tube or speculum and a mirror to reflect and



EAR SPECULUM.

concentrate the light. The internal ear is one of the wonders of the body, so delicate and intricate is it in its mechanism. Any and all portions of the auditory apparatus are subject to inflammation, injury, morbid growth and perverted function. A few of these will be briefly mentioned. The external canal may be inflamed, swollen

to closure, obstructed by foreign bodies and insects, its membrane thickened, ulcerated or may discharge in abnormal quantities mucus, pus or wax; the drum may inflame, thicken, perforate or become punctured by accident, be the seat of diseased growths, either fungus, polypus or tumor or be so thickly covered with cerumen (wax) as to be inoperative; the eustachian tube may be closed by inflammation and swelling, by pressure from swollen tonsils, by mucus (catarrh) or stricture; the internal ear is subject to catarrh, suppuration and decay of the bones from catarrh of the head reaching it or resulting from measles or scarlet fever. Most of these maladies affect the hearing. Add to these malformation, and it is evident that the successful treatment of deafness requires superior skill and intelligence. Tumors, fungus and polypus in the ear are relegated to the hands of the specialist or surgeon. With this much by way of introduction, we are now prepared to introduce some of the more common and less formidable complaints of the ear.

INFLAMMATION OF THE EAR.—*Otitis.*

As above observed, this may involve any part of the structure or beginning in one part may spread and affect others. Most commonly it is the result of a cold. It is "characterized by pain in the part, which is increased by pressure and by noise as well as by the motions of the head and of the lower jaw and by exposure to cold air." Headache, uneasiness, some fever and ringing of the ear accompanies it.

TREATMENT.

If caused by a recent cold, the Turkish or spirit vapor bath should be administered. The internal remedy most effective is,

R.—Tincture of Veratrum Viride,	. . .	twenty drops,
Essence of Wintergreen,		ten drops, .
Water,	. . . , ...	ten teaspoonfuls.

Mix.

Take a teaspoonful every hour or two. A mustard paste may be

applied to the head behind and under the ear, removing it when the surface is well reddened. A hot pack, well sprinkled with spirits of camphor, may be applied to the side of the head, completely enveloping the ear, and secured by a bandage. The bandage may be made of a strip of cotton cloth, six inches wide and thirty inches long. Tear the ends in two toward the center about ten inches. Place the undivided part upon the crown of the head, the ends hanging down by the ears. Bring the back ends forward and tie under the chin ; the forward ends tie under the back of the head. If the back knot slips, pass a ribbon through the noose and tie around the neck.

Earache, in a majority of cases, is due to inflammation, and may be treated in the way just described. If the pain is severe, adults may have dropped into the ear a mixture of equal parts of olive oil (warmed) and laudanum, and the opening closed with cotton wool dipped in the same.

Inspissated Cerumen, or *hardened wax* in the ears, comes about slowly and covers the drum. In time there is pain, constant or occasional, defective hearing, and a stopped-up feeling. If, upon inspection, an excess of wax is found covering the external canal, it may be inferred that the drum is also covered. The head should be turned sideways and a few drops of warm glycerine or olive oil dropped in. If allowed to remain twenty-four hours, the cerumen will soften and be easily removed by a syringe with soap and warm water.

RUNNING FROM THE EAR.—*Otorrhœa*.

This results from long-standing inflammation, may follow measles or scarlet fever, may arise in any portion of the ear, and is more prevalent in the debilitated and scrofulous. The discharge is sometimes mucoid, sometimes purulent or bloody, and may find vent internally into the throat, or, if from the middle or external portions, outward through the external opening. When the disease is located in the middle ear, the drum is frequently perforated ; there is severe pain in the ear, and a sense of fullness, ringing noises, inflamed drum,

impaired hearing, and usually pharyngitis and nasal catarrh. The popular treatment of nasal catarrh by the douche is a frequent cause, we might say, the most frequent.

TREATMENT.

When fetid discharges follow inflammation of the external ear, as is frequently the case with children, drop into the ear a few drops of a mixture composed of

R.—Tannin,	.	.	.	.	.	two grains,
Glycerine,	.	.	.	.	.	one ounce.
Mix.						

Also, plug the ear with a piece of cotton wet with the same. Wash out with tepid, soapy water daily. If this is not done the membrane becomes covered with a dry, hard crust, which adds to the pain and inflammation. When possessing an atomizer, (see illustration in Catarrh), these applications can be made in the form of spray, which is far preferable in every way, chiefly because in the hands of a nurse it is not so likely to *do harm*.

In the chronic form the treatment must be continued regularly and for a long time, and even then may be intractable. Use two or three times a day with the atomizer,

R.—Carbolic Acid,	.	.	.	.	five to ten drops,
Water and Glycerine,	.	.	.	.	four ounces each.
Mix.					

Alternating every third day with

R.—Sulphate of Zinc,	.	.	.	.	five to ten grains,
Warm water,	.	.	.	.	four ounces.
Mix.					

The mustard paste should be frequently applied to the head behind the ear. If it should occasionally blister only good will result. Alteratives, such as the Queen's root compound, are indicated in chronic catarrhs of the ear; when the glands at the sides of the neck are sufficiently enlarged to be felt upon pressure by the finger-tips, take of

R.—Fld. Ext. Blue Flag,		six drams,
Fld. Extract Poke Root,		six drams,
Fld. Ext. Mandrake,		four drams,
Simple Syrup,		six ounces.

Mix

[One-half or a full teaspoonful three times a day.

Cases in which catarrh of the eustachian tube is the chief cause of deafness or other ear difficulties, we are accustomed to treat simply as catarrh of the head, with which it is so often associated. It is generally known that disease is transmissible, but not so well understood that health is contagious. With blood purified and the contiguous membrane in a healthy condition, this tube often heals without any special treatment.

FOREIGN SUBSTANCES IN THE EAR.

Children have quite a habit of putting beans, peas, cherry-stones, beads and the like, in the nose and the ears. To most who have not considered the subject, the removal seems difficult. Inexperienced physicians are sometimes puzzled. The great fault seems to lie in using instruments for the purpose of *pulling out* the obstruction, the result being that it is pushed in until it presses upon the drum, causing great pain. Nothing should be introduced unless perhaps two or three drops of oil. Place the child upon your knees, with the ear containing the article downward, and by a sudden blow upon the head just above the opposite ear, it will usually fall to the ground. Sometimes a second blow is necessary. Should this fail, a thin wire loop may be passed behind the substance with great care and by traction, removed. Insects are best removed by filling the ear with warm oil, when they will float to the surface.

Substances introduced *into the nose* may be removed by several methods. One is to place the child face downwards upon your lap, closing the mouth with one hand and strike a sharp blow upon the back of the head with the other. Another is closing the free nostril

with the finger (which compels the child to breathe through the mouth), take a deep inspiration and suddenly and forcibly blow into the child's mouth. Do not attempt to extract them with instruments.

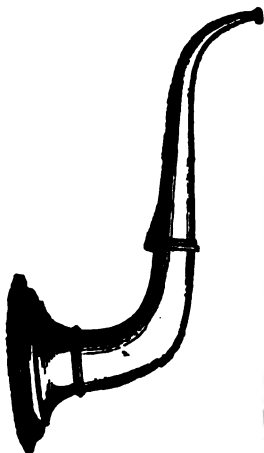


Fig. 1.

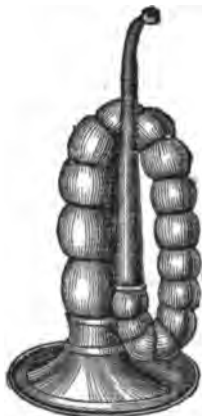


Fig. 2.



Fig. 3.

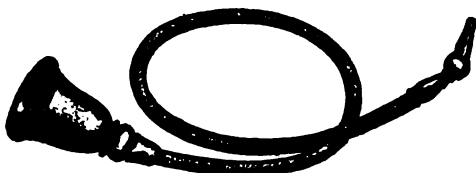


Fig. 4.

CORNET, EAR TRUMPETS AND CONVERSATION TUBE.

Fig. 1. Ear Trumpet—double curved.

Fig. 3. Ear Trumpet—articulated.

Fig. 2. Silver Cornet.

Fig. 4. Conversation Tube—mohair with hard rubber fittings.

ORDER IV. DISEASES OF THE NOSE.

CATARRH.—OZÆNA, INFLUENZA—*Catarrhus Nasalis*.

This disease prevails to a great extent throughout Europe and America. It is more extensive in cold than in warm countries, and it is more frequently met with in New England and the Middle States than in the South and West. Those whose labors are within doors and who are confined to the heated air of cotton or other mills; those who are breathing an atmosphere loaded with dust of any material are the principal sufferers. From the fact that it leads to such serious effects, producing bronchitis and consumption, so often defying the skill of the most eminent physicians, it should receive more than usual attention and consideration. Most medical works speak of catarrh as a slight disorder easily cured. Many affected with it have tried almost everything spoken of as remedies, but without success. With similar results the advertised specifics have been administered, and even a doubtful medication received at the hands of specialists. It is, therefore, with more than usual pleasure that we confidently recommend a plan of treatment that has permanently cured the majority of cases and given decided relief to all.

As remarked in another place, catarrh usually begins in the pharynx or throat, and extends upward into the air passage of the head and nose. It may be defined as an inflammatory affection of the mucous membrane of the respiratory passages. We have at this time only to consider what is termed catarrh of the head, snuffles, or permanent snuffles. The principal symptom is the excessive secretion about this membrane of mucus; sometimes thin and watery,

particularly at the outset, at other times, thick, clotted, tenacious and offensive ; varying between these two. It begins, in most instances, as a slight cold, requiring the frequent use of the handkerchief. When seated, the discharge has a firmer consistency, and may be expelled by one of the nostrils or throat, more frequently the latter. An uneasy sensation is felt in the throat, and the operation employed in discharging it demonstrates whether it is above or below the palate. If above, it will be noticed that by a strong and sudden effort air is drawn through the nose. Then hawking takes place, and the clot is discharged through the mouth. This is a sure sign of catarrh of the head. When it comes from below the palate, a cough is necessary to loosen it, while the former is seldom accompanied with cough.

Simple catarrh is usually produced by a cold, and this is true of catarrh of any of the mucous membranes, not excepting diarrhoea. This is not, however, the only cause. Irritating substances bring on an attack ; weakness of the membrane and general debility are, also, sources of the affection ; impurities in the blood not only cause a vitiated secretion, but help to prolong it. A fact equally worthy of notice is that the discharge, by its debilitating effect, contaminates the blood and weakens the system. In some families it is hereditary. Some persons suffer from it when debilitated by the hot weather of spring and summer, and are relieved when the temperature is cooler. This is a symptom of physical weakness, and is quite different from the catarrh in question, which increases in cold weather. We doubt very much if any peculiar condition of the atmosphere generates the disease, but fully believe that frequently "taking the breath" of those infected, or inhaling the dust of sputa which has become dried, pulverized, and mixed with the air, is infectious.

In addition to those already mentioned there are other symptoms, special and prominent. There is a continual desire to swallow, and large quantities of this decaying phlegm are passed into the stomach. Something sticks in the throat and may annoy to such an extent as to deprive a person of sleep at night. Breathing is carried on through

the mouth and the breath is offensive. There is pain in the forehead between the eyes. This is caused by the enlargement and congestion of the blood-vessels that follow the nerves of smell through the sieve-like bone into the brain. This enlargement causes pressure and pressure is indicated by pain. The membrane, lining all parts of the nasal cavity, becomes thickened and that part upon which the delicate fibres of the nerves of smell are spread, becoming involved, this sense is blunted or destroyed. The sense of taste with which smell is so intimately associated may be similarly affected. The canal leading into the inner ear is lined with mucous membrane which is continuous with that of the nose, and if the catarrhal inflammation spreads in this direction, and it very frequently does, deafness may result either in one ear or both. So excessive is the secretion of mucus in some cases that patients are spitting it from the mouth constantly; nausea and vomiting frequently attack a person in the morning on rising, produced undoubtedly by the mucus which has collected in the head and throat and which irritates the palate in a similar manner to the introduction of the finger.

Thickening of the membrane is not the only condition. Ulcers may locate on any part of the membrane and discharge purulent matter or matter mixed with blood; or if a blood-vessel is ulcerated, hemorrhage ensues. Nor does this ulceration cease here. It denudes the bone of its covering and may destroy its substance. The bones of the nasal cavity are many, of peculiar shapes and mostly thin and fragile. With death of the bone the discharge becomes exceedingly offensive and the pain is severe and almost constant. This discharge ulcerates and inflames the surface over which it flows. Ulcers in the nose will sometimes cause unsightly sores upon the lip. If the bones are involved to any great extent the voice becomes changed. Drowsiness, pain in the eyes and emaciation often attend this complaint. It is not unfrequently followed by bronchitis and consumption.

Almost every plan of treatment that human ingenuity can devise has been tried, and the medical profession have to admit, with little success. We will notice a few, and try and point out the causes of

failure. Snuffs are of two kinds : one intended to produce sneezing, and thus cleanse the membrane; and the other composed of healing ingredients. The first is ineffective, because cleansing is not all that is needed; the second, for the reason that it reaches but a very small portion of the part involved; it may be deposited at one point, and there in quantities, while other parts are untouched. Washes that are poured into the palm of the hand and snuffed up with force, cleanse but little, and bathe but a limited portion of the membrane. The *douche* is recommended by the majority, both professional and unprofessional. It consists of a basin filled with a medicated liquid, from the lower portion of which a rubber tube conducts to the nostril. The basin is lifted above the head and the flow is downward into one nostril, passing out of the other. This is unsuccessful because only the floor of the nasal cavity is washed by the current. These methods do harm, also, by forcing the mucus into the eustachian tube and into the middle ear, causing great pain, producing hypertrophy of the lining membrane, and not unfrequently deafness. The records of ear infirmaries universally confirm this. A humbug of recent date is a catarrh inhaler. This consists of a bottle half filled with some liquid, principally alcohol mixed with strong ammonia. By the side of the tube through which the air must pass on its way to the fluid, is a bulb containing hydrochloric (muriatic) acid. The air passing along this tube carries with it the vapor of the acid. Passing into the fluid it mixes with the ammonia, forming a whitish cloud, which is the hydrochlorate of ammonia, (sal ammonia), in very fine particles. It is taken into the mouth and discharged through the nostrils. It is totally incapable of ever dislodging or penetrating the mucous clots, and has a very limited effect in the healing process. Ozone is a good disinfectant, but is subject to the same objections. Syringes of different patterns are used, and throw a stream either backward through the nostrils, or are furnished with a curved neck, and propel the liquid forward from behind the palatine arch. From the amount of force used they very well cleanse all points touched by the streams, and then the liquid falls to the floor of the cavity and

passes out. The shape of the bones are such that with the use of both it is impossible to reach the whole surface. They have another fault. Owing to the velocity with which the injected fluid strikes the walls of the cavity of the nose, it creates pain, sternutation and lachrymation. Indeed, pure water in contact with the schneiderian membrane, causes stinging and smarting pain.

The indications are to reduce the swelling or thickening of the lining membrane of the nose, to relieve inflammation, to heal all ulcers or sores, to keep the surface free from scales or scabs, to destroy offensive odor and induce a healthy tone, and hence break up the tendency to relapse.

TREATMENT.

This may be divided into local and constitutional. Neither one alone will permanently cure. As a constitutional remedy, we advise tonics to be taken, but varied according to the constitution of the patient. This may be better understood by citing examples. If the patient is of the scrofulous diathesis by hereditary taint or other cause, those remedies are employed that will change the character of the blood and remove its irritating qualities; if there is dropsy or torpidity of the liver, these organs must receive special attention. The *rationale* is that with the congestion of an internal organ there is an increased flow of blood to the organ, and with this congestion there is a disturbance in the circulation which, of itself, prepares the way for taking colds. Again, with constipation and inactive kidneys, the skin performs double duty. The mucous membrane is but a continuation of the skin, and the excretion of foreign matters overworks, and, as a result, weakens it. The weakened and flabby membrane promotes catarrhal inflammation. Space will not allow the insertion of all the diseased conditions or of the special remedies for their constitutional treatment.

An active and healthy condition of the skin is absolutely necessary. The occasional use of the Turkish or spirit bath tends to relieve internal congestions and invigorates the surface. If these baths are followed by proper rest and cooling and the use of cold water, immu-

nity from colds is secured. A good plan that can be adopted by every one is daily bathing the chest with cold water. The application should be made with the hands on rising, and if the part is sensitive to cold water, it should be begun in the summer time. The chest above the waist is quickly wetted and subsequently dried with a coarse towel, using some friction. The time consumed need not exceed three or five minutes. The relief to the lungs is considerable, and to a person adopting such a habit, winter loses much of its severity. We have been thus particular in speaking of guarding against colds, because treatment is unsuccessful without it and discouragement follows the frequent relapses caused by them.

Local means, to be effective, must *reach all parts* of the membrane, no matter what remedies may be employed. The only exception is where a local effect is desired, as in the case where phlegm is tenacious and clings to the throat, when snuffing warm water combined with a little salt, will free it so as to be discharged through the mouth. There are but two plans that we consider effective in local treatment; one by throwing a stream into one nostril by means of a hard rubber syringe having a properly fitted point and fine orifice. The fluid not only cleanses the parts, but accumulates in the nose and is prevented from returning by the syringe. The head is inclined a little backwards and the breath held. When the fluid begins to overflow from the open nostril then the nose should be held between the thumb and finger, the syringe removed, and the body bowed forward until the forehead comes to the knees. Holding this position a very short time the natural position may then be resumed and the fluid allowed to escape. In this way all parts are subjected to the action of the medicated fluid.

Another plan, not only the most important but the most effective, and attended invariably with good results, is the use of my Nasal Atomizing Instrument. This consists of a bottle partly filled with the remedy hereafter mentioned. Passing from beneath the surface of the fluid is a tube which arises through the cork and terminates in the curved neck and bulb point. Just above the cork is an attach-

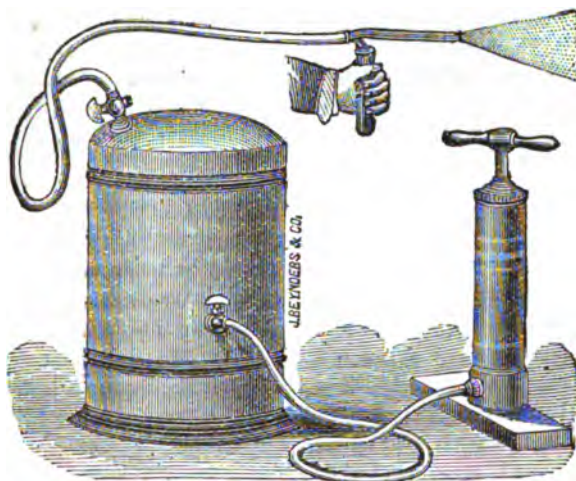
ment to a tube surrounding this tube. This outer tube is meant to carry air, and by its forced expulsion at the point draws the fluid up and scatters it as a fine mist. A part of the air supply passes into the vial and pressing upon the surface of the fluid forces through a



ATOMIZER or spray apparatus, with hand-bulb and covered reservoir. By the latter a continuous spray is produced.

greater quantity of the medicament than the other instruments made for the same purpose. The air is supplied by a rubber pipe and elastic hand-bulb. In order that the spray may be delivered uniformly, an air chamber is placed between the hand-bulb and the instrument. The hard rubber point at the end of the main tube is adjustable. This allows of its removal in case of clogging, and also permits the attachment of other pieces.

There are three of these, one meant to throw a spray into the



Air Pump and Receiver, used by the physician so as to dispense with the manipulation of the hand-bulb.

nasal cavity, through the nostril, the second into the same cavity from behind the palate and the third downwards into the throat and air passages. To say that the application is mild, hardly expresses the soothing effect produced. Even a child is pleased with it, and takes the author's chair with a confidence of relief that is as pleasing as it is surprising. The principal recipe employed consists of the following:

R.—Tincture Fleabane,
 Tincture Aconite,
 Tincture Veratrum Viride, of each two drams,
 Tincture Pennyroyal, . . . half dram,
 Carbolic acid, ... forty drops,
 Chlorate of Potash, . . . one ounce,
 Rain water, ... two pints.

Mix and put two ounces in the bottle.

If the patient is subject to hemorrhage, more fleabane is added.

If the inflammation is severe more veratrum is added, the other ingredients remaining the same. If there are ulcers, the aconite is withheld and the carbolic acid increased. In cases where the membrane is much inflamed and the mucus is acrid, and irritates the skin of the nostrils and upper lip, we omit the fleabane, aconite and pennyroyal, and add

Glycerine, ... one ounce,
Tincture Golden-seal, . . . two drams.

In severe cases the application should be made daily, and continued for some ten minutes. In the milder cases the daily application of about five minutes will be necessary only during the first week. A sitting of fifteen minutes every other day, for a fortnight following, will complete the cure. After each use, the instrument should be carefully cleansed and dried. Ulcers in the nostrils and upon the lips are treated with pure glycerine.

Recovery is more rapid, and requires much less care during the warmer months of the year, than in winter. The treatment has been successful in our hands at all seasons; but in cold weather a lady should use a heavy veil to cover the face when going out doors. A gentleman must also protect the membrane from too sudden chill of a low temperature; and we have found that the best protection is by wearing an overcoat supplied with a cape. This may be raised by the arm or hand about up to the eyes. The air is by this means partially warmed before it reaches the head. In ten minutes or so the head will be sufficiently cooled, when this protection may be dispensed with.

We have reason to believe that nasal polyp have yielded to treatment by this instrument, when a strong solution of tannin has been employed. In cases attended with necrosis or diseased bones, a mild solution of sulphate of zinc has been used successfully. It does not appear to be adapted to the cure of diseases of the antrum.

NASAL POLYPUS.

This is a morbid growth inside the nasal cavity, commonly fastened to the bone on one side. When catarrh is accompanied by an unusual amount of sneezing, parasite may be suspected. As it increases in size there is a sense of fullness, some pain, difficulty in breathing through the nostril, impaired sense of smell, and when the growth reaches sufficient size, it may disturb swallowing, hearing, and even respiration. At times the face is disfigured from the pressure downward.

The treatment should be by the application of some mild caustic by a camel's hair brush. The tincture of iron and water in equal parts is a good remedy when used with the spray instrument and repeated daily. If these do not arrest the growth, it should be removed by the polypus forceps.

ULCERATION OF THE ANTRUM, OR MAXILLARY ABSCESS.

Just behind the cheek-bone and above the roof of the mouth is a cavity walled on two sides by these bones, and on the third by the bone at the side of the nasal cavity. It is empty, and has a small opening into the nose. It has a mucous lining continuous with that of the nose. This is liable to ulceration in scrofulous people, and sometimes has its origin in ulceration of the root of the second molar tooth, which touches the cavity, and, in some instances, projects into it.

The symptoms are toothache, pain in the face under the cheek-bone, the discharge of matter, attended with great fetor, feverish condition and swelling of the face.

TREATMENT.

If the second or third molar tooth has not been extracted, it should be. The object is to communicate with this cavity through the mouth. If a probe does not pass readily in through the canal formerly occupied by the root of the tooth, it should be drilled for this purpose. When communication is established, the treat-

ment is possible, but without, it is impossible. We now have an opening at the bottom of this cavity and an opening at the side. Injections can be carried upward into the antrum, which will escape into the nasal cavity. After clearing the cavity of its contents and cleansing its lining membrane with tepid water, a healing solution may be employed, consisting of

R.—Glycerine,		, one dram,
Carbolic acid,		ten drops,
Tincture of Golden-seal,		half a dram,
Warm water,		four ounces.

Mix and inject. After each treatment the cavity formerly occupied by the tooth should be closed by a plug made of soft wood and nicely fitted. It should be no longer than to reach to the line of the gums. It will be necessary to continue this treatment for several weeks. Feverish symptoms may be met on general principles. If pain is severe, it may be relieved by two-grain doses of opium, taken only at bed-time to secure rest.

ACUTE CATARRH, SNUFFLES—*Coryza*.

We have partly reviewed this subject under the headings of colds and coughs and of catarrh. The principal symptoms of coryza are congestion of the mucous membrane of the nasal cavities, frontal headache, heat in the superior portion of the face, somnolence and dryness of the mouth and throat. In the more pronounced, the swelling of the mucous membranes closes the nasal cavities and prevents the ingress of air by this passage and compels a constant respiration by the mouth.

It is evident that if we could provoke an energetic contraction of the mucous membrane, the air must find a free passage through the nasal cavities, the frontal headache and lachrymation disappear and with them the dryness of the mouth, which can now be kept closed. And more, the expulsion of fluid mucosities that before could not be detached by the most violent efforts, are facilitated.

This disease, which in adults presents inconveniences only and those easily endured, becomes a grave affection when it attacks the nursing. Here the closure may menace the life of the infant, in rendering impossible its efforts at suction. Prompt action is necessary.

TREATMENT.

For the adult a snuff may be made of

R.—Tannin, ... six grains,
Pulverized Gum Arabic, ... four drams.

Mix.

Or of

R.—Subnitrate of Bismuth, ... three drams,
Pulv. Gum Arabic, ... one dram,
Morphine, ... one grain.

Mix.

One-half or the whole of either of these powders may be taken as snuff in a day, if necessary. The inhalations, in the ordinary manner from between the thumb and fore-finger, should commence as soon as the coryza begins to show itself and be used frequently at first. Each time the nostrils are cleared, another pinch should be taken. A slight smarting may appear if the internal membrane is much irritated, but it soon disappears.

For children, oil the nose and forehead or smear with glycerine. A camel's hair brush should be dipped in glycerine, or ointment and then as much of the powder as will adhere to the point, taken up. This should be inserted in one nostril and repeated in the other. If properly done, sneezing soon follows, and the head clears and the child will take the breast. Before we learned of this method, we employed an ear-syringe, with warm water and tincture of golden seal, forcing the fluid up one nostril, to return with the mucus through the other. The swelled end of the ear syringe snugly fits the nostril of infants.

NOSEBLEED.—*Epistaxis*.

When the blood-vessels of the head are weak or congested, rupture occurs in the more delicate vessels about the nose and the escaping fluid appears at the nostril. If profuse, it may appear at both nostrils. Many conditions give rise to nosebleed but more particularly such as cause a determination of blood to the head or a plethoric fullness of the blood-vessels of the whole body. These are colds, over-heating, over-work, over-eating, the use of alcoholic liquors or tobacco, suppressed menstruation, pregnancy, injuries, etc. Debility and fevers have nosebleed as a symptom; also wounds and injuries, tight corsets or collars.

TREATMENT.

Remove the cause when known. Remain quiet with head elevated. Do not stoop over but keep the head up and place cloths under the nose to catch the blood. Stuff cotton or soft paper under the upper lip and tie a cord pressing beneath the nose and over the ears, tightly behind the head. Any of the following methods may be adopted: Burn a cork and powder it in a cup, snuff up pinches of this. Use tannin in the same way. Either of these may be blown into the nostril through a quill. Soak the feet in hot water, drink hot tea or hot water, and apply a cold pack to the nape of the neck. This restores circulation and relieves the head. The remedy is oil of fleabane. Rub upon the palm of the hand and *smell* by strong inhalations. Internally may be taken

R.—Tincture of Fleabane,
Tincture of Cinnamon, . . . in equal parts.

Mix.

Take a few drops upon a lump of sugar every quarter or half-hour.

ORDER V. DISEASES OF THE MOUTH, FAUCES AND ŒSOPHAGUS.

CANKER, THRUSH, NURSING SORE MOUTH.—*Aphthæ, Stomatitis.*

This occurs principally in nursing children. The glands of the mouth inflame and throw off whitish curdy flakes or scabs. At first they are not very numerous, but soon multiply and run together, covering the cheeks, gums, tongue, and may extend down the throat and digestive canal, affecting the whole tract. The mouth is dry and hot, the child feverish and restless. A greenish diarrhœa sets in with vomiting and the flesh and strength diminish. Aphthous mouth appears occasionally in adults suffering from dyspepsia.

TREATMENT.

Indigestion is the primary cause of this malady and attention should promptly be called to the condition of the mother, if nursing, or the character and quality of the food taken. For the diarrhœa, give the third of a teaspoonful of calcined magnesia in a little sweetened water, or occasional doses of tea made by steeping a teaspoonful of

R.—Peppermint leaves,		one dram,
Rhubarb pulverized,		two drams,
Bicarbonate of Soda,		one dram.

Mix.

In a cupful of boiling water. Sweeten and strain, or let cool and settle. For the mouth dissolve a dram of borax in a cup of warm water and brush the mouth every three hours with a *soft* swab made of old cotton cloth tied to a stick. A harsh rough swab does more harm than good. In adults the patches may be touched by a camel's

hair brush with the tincture of chloride of iron. Another recipe, good in all cases, is to take oak and hickory ashes, recently burned, and steep in boiling water for twenty-four hours. Strain or filter through paper. Dissolve in one pint, one pound of pure maple sugar by bringing to a boil. Cool and add one pint of Holland gin. Use as a gargle or with a swab. Do not swallow in gargling. As a dose ten or twenty drops may be given in water.

DISEASES AND CARE OF THE TEETH.

SPONGY GUMS, LOOSE TEETH AND DISAGREEABLE BREATH CAUSED BY THESE CONDITIONS.

The relaxed and flabby state of the gums is seldom a disease of itself. The causes should be searched for among diseases affecting the stomach, or among constitutional affections. It may be safely asserted that the greater number arise from constitutional scrofula and from dyspeptic conditions. In former years it was more common to find the malady dependent upon salivation by mercurials. Lead also tends to disease and soften the gums. In lead-poisoning the gums have a bluish to blackish color.

Disease of the alveoli, or bony portion of the jaw surrounding the roots of the teeth, is more hidden, but also affects the breath (we are not speaking of catarrhal conditions). Suspicions of this complaint may be held if the teeth are loose; the teeth of course will be firm when the necrosis or death of the bone *begins*.

The treatment that will harden the gums will also act kindly upon the mucous membrane of the mouth and upon any vitiated secretions that may be present as a complication. A good plan is rinsing the mouth with a solution of ten grains of borax and ten or fifteen drops

of tincture of hydrastis or tincture myrrh in one-third of a tumblerful of water. While the solution is in the mouth, the gums may be gently rubbed with the finger end. A brush, however soft, is harsh to spongy gums and causes irritation and bleeding. A better wash may be compounded as follows:

R.—Tinct. of Myrrh,		two drams,
Spirits of Camphor,		one dram,
Tinct. of Bark,		two drams,
Spts. Cologne,		one ounce.

Mix.

Put a little carbonate of soda in a wine-glass and add a teaspoonful of this mixture. With this the mouth may be rinsed and as the gums harden it may be used with a brush. It is an excellent wash to use after medicines such as tincture of iron, etc., as it destroys the taste and odor, perfumes the breath and is healing.

When fetid breath proceeds from decayed teeth, filling or extracting them will effect its instantaneous disappearance. If its origin is in the stomach, calcined magnesia taken internally two or three times a day for a number of days will neutralize and cure it. When the odor is very strong or due to catarrh, or does not yield to the above, the atomizer must be used as recommended in catarrh.

When a child while cutting teeth is feverish, restless and cannot sleep, a night-cap made of thick material, may be wrung out of cold water and placed on the hot head. Over this a second cloth may be applied. This second one can be removed from time to time and reapplied without disturbing the cap. When the gums bleed easily and are spongy, the mouth should be thoroughly rinsed with a solution of twenty drops of tincture of myrrh in half a glass of water. Gargling the throat at the same time is beneficial to the mucous membranes of the throat, tonsils and palate. The addition of a small quantity of borax or bicarbonate of soda, will improve the wash. If the gums are very tender, simple washing must do. As they become hardened, the end of the finger may be used in rub-

bing the gums while the wash is in the mouth, and eventually the brush employed without injury.

Defective teeth in children indicate defective nutrition, particularly of the nutrition of that material of which the teeth is composed. These are plentiful, in unbolted wheat-meal, oatmeal, in peas and the like. We prepare a syrup containing the exact chemical constituents, and supply it when wanted at cost, or the prescription will be sent upon receipt of application and postage stamp. We call it "teething syrup," and it better deserves the name than the many preparations assuming this name, which contain chiefly opium or anodynes.

We have a hint to give those who do not care to lance the gums of children, and it is this : in most cases it will do as well, and as completely allay irritation and congestion, to open the engorged blood vessels at the reflected junction of the lip and gums.

TOOTHACHE.

This arises from exposure of the nerves of the teeth, from pressure upon the nerve, and from ulceration at the root, which also induces pressure. When the tooth is hollow and the nerve exposed, the cavity should be closed by cotton or wax. The cotton may be wet with the following mixture, which we believe to be "toothache drops" without a rival. It benumbs and narcotizes :

R.—Tincture of Aconite root,	.	.	.	one ounce,
Tincture of Opium,	.	.	.	one ounce,
Carbolic acid,	.	.	.	one dram.

Mix.

A toothache from other causes than the exposure of the nerve and neuralgia, can be better understood from a moment's consideration of the anatomy of the parts. Into each tooth-root passes a nerve and blood-vessels. If, from any cause, the blood-vessels become distended with an unusual amount of blood, the bone, being inelastic, of course, cannot give way, and the result is pressure upon the nerve. This is the actual condition with the majority, and the nerve irrita-

tion only increases the trouble. It will appear, therefore, theoretically, at least, that whatever calls the blood away from the part would relieve the irritation and pain. Practice proves the correctness of these views. We must cure by counter-irritation. To an eminent and practical physician in this city we are indebted for the remedy about to be described. It has these special advantages : it is novel, simple, within easy reach, and, best of all, effective.

Treatment.—With a piece of cotton cloth make a small bag about the size of a finger-stall, which will snugly cover one-half of the little finger. Place in this one-half or one-third of a teaspoonful of dry mustard-flour and sew up the opening. This is to be placed by the side of the aching tooth, between the gum and cheek, and there held. It may be removed occasionally to prevent blistering. A case might occur in which a mustard paste to the outside of the cheek or jaw would be advisable, but we have not thus far met such.

Gumboils may be opened with the point of a pen-knife blade, and the myrrh wash used as above described.

DECAYING TEETH.—*Dental Caries.*

The general prevalence of dental caries is chiefly owing to food remaining on and between the teeth after meals—from breakfast till the following morning—when, according to the custom, the teeth are brushed, but probably not cleaned, as the brush is more often used to polish the surface merely than to assist in removing what has accumulated between them. Experiments have been referred to that prove the solvent action of weak acids on the teeth; and we think it will be conceded without proof that, were portions of our ordinary food, mixed and moistened as in mastication, kept during the night at the high temperature of the mouth, the compound would be sour. It follows that dental caries must continue to prevail as now, while the food is allowed to remain in contact with the teeth all night.

When the teeth are wide apart, food does not remain in contact

with them, and they are generally free from caries. The lower front teeth are seldom attacked by caries when, as is generally the case, the spaces between are closed to the entrance of food by tartar. The backs of all the teeth, upper and lower, being kept free from food by the tongue, are seldom attacked by caries. Lodgment of food takes place between the bicuspid, between the molars, in the depressions on the masticating surfaces of these teeth, and on the buccal walls of these molars, and these are the chief seats of caries. While mastication is performed by the molars and bicuspid, the upper front teeth remain free from food and from caries; but, when they themselves are made to do the work of lost or diseased molars, and the food gets between them, caries is certain to follow before long. If no food remained in contact with the teeth after eating, they would be free from caries, unless acted on by acidity from other sources. The only indications, therefore, for the prevention of dental caries are the neutralization of acid applied to the teeth, and the removal of food before it has become acid. Therefore always *clean the teeth at night*, just before retiring. Scrub the teeth with a hard brush, using little, if any, soap; sprinkle on a very little pulverized borax. Until the gums are hardened, and become accustomed to the use of borax, rinse the mouth often with borax water: it prevents it from becoming sore or tender. If artificial teeth are worn, cleanse them thoroughly with borax, and when convenient, let them remain in borax water all night; it will purify them and help to sweeten the breath.

The brush must be aided by the quill. There are points in perhaps every mouth, where solutions of food, or other acidulated matters cannot be distributed by the brush. The quill breaks up these nests on proximal surfaces. The use of brush and quill is not a burden; it becomes a matter of comfort, and one does not feel well without them.

The Odontographic Society promulgates these excellent rules :

1. Cleanse your teeth once, or oftener, every day. *Always* cleanse

them before retiring at night. *Always* pick the teeth and rinse the mouth after eating.

2. Cleansing the teeth consists in thoroughly removing every particle of foreign substance from around the teeth and gums.

3. *To cleanse*, use well-made brushes; soft quill or wood toothpicks; an *antacid styptic toothwash*, and *precipitated chalk*. If these means fail, apply to a reliable dentist.

4. *Always* roll the brush up and down lengthwise of the teeth, by which means you may avoid injuring the gums and necks of the teeth, and more thoroughly cleanse between them.

5. *Never* use a dentrifice containing acid, alkali, charcoal, soap, salt, or any gritty or powerful detersive substance.

6. *Powders* and *pastes* generally are objectionable. They injure the gums and soft parts of the teeth, and greatly assist in forming tartar. A *wash*, properly medicated and carefully prepared, is pleasanter and more beneficial. It dissolves the injurious secretions and deposits, and the whole is readily removed with the brush and water.

7. *Avoid eating hot food*. Thoroughly masticate and insalivate the food before swallowing it. Frequent indulgence in sweetmeats, etc., between regular meals, disturbs the process of digestion, and a viscid secretion is deposited in the mouth (from the stomach) which is very injurious to the teeth.

8. *Parents*, carefully attend to your childrens' second dentition. Gently prevail upon them at an early age to visit, at frequent intervals, a careful and skillful operator.

Remember that four of the double teeth come in at the age of six years. They are very liable to decay early, are very large, and should never be allowed to require extracting.

Children do not "shed" their teeth as they did in former ages. Instead of being trained to masticate nutritious food, they are tempted with and allowed to "gulp down" delicacies, hot cakes, hot beverages, etc. Thus, by depriving the teeth of their natural function and overtasking the stomach, a morbid condition of the general system is produced; the first teeth are prematurely decayed, and the per-

manent set are not matured at the proper period of dentition. The consequences are terrible.

9. *Never allow any one to extract a tooth* or to dissuade you from having it filled, unless absolutely necessary. Many so-called dentists, actuated by selfish motives, advise extracting, and sacrifice teeth, which competent operators, can render serviceable for many years.

10. *Carelessness and procrastination* are responsible for a large majority of the teeth that are lost.

Bleeding from tooth-drawing is insignificant ; only exceptionally is it excessive. It may be stopped by placing in the cavity left by the tooth a piece of moist cotton dipped in powdered alum, or cinnamon, or in tannin. If neither of these do, use persulphate of iron, in powder or solution.

DENTITION.

The period of teething in infancy is generally looked upon by parents with many forebodings of ill. The opinion prevails that diseases of some kind, dangerous in character must necessarily accompany the process. The fact that it is the growth of a part of the body as natural in its development as any other, and certainly not involving any vital part, is overlooked. It may be that these beliefs are founded upon a sort of deluded and inaccurate experience, and, like all fears, they are easily circulated. It cannot be denied that many children die of cholera infantum, marasmus, and similar diseases while teething. The careful investigation of very many cases has compelled the professional opinion that in the majority, the individuals would have perished of the disease independently of the local irritation. With scrofulous and otherwise deficient constitutions in parents, it cannot reasonably be expected that a child will develop in due and fair proportions, if, indeed, it develop at all. We believe that we are correct in the judgment, that the diseases co-existent with dentition and which hazard if not destroy life, are those of non-nutrition. Constitutionally infirm at birth, and, in some instances, pre-

maturely born, there is not time during the first six months or eight months of existence to bring the system to its proper standard in every particular, and thus prepared, have the formation and eruption of the teeth a simple continuance of development. In such instances the lack of nourishment continues after birth, for if the mother furnishes lacteal fluid, it is "thin and watery." The proportion of nutritive elements is sadly decreased, or if the infant is furnished with cow's milk, the stomach is deficient in that vital energy necessary to proper digestion and assimilation. We do not mean to assert or imply but that there are cases in which, from the irritation and inflammation attending the appearance of a tooth or teeth, a diseased condition is caused and does exist. Every physician and every mother of a large family has seen such. Physiologically, the advance of the teeth should correspond exactly with the absorption of the gum. It can readily be conceived that influences may be exerted or circumstances arise which would interfere with this co-operative action. Then help might be given which would assist the natural process. It sometimes happens that this irritation extends from the teeth along the jaws, down the throat and stomach to the bowels; sometimes it is reflected through the nervous system to the brain and spinal column. In the former case, diarrhoea, cholera infantum and the like succeed. In the latter convulsions supervene. The use of the gum-lance has, in many cases, terminated all these terrible consequences. This we have seen repeatedly. We are aware that among the medical profession, and by those who are cited as authority, the fact of such a disease as teething is doubted. Others of equal celebrity contend that teething is a disease and very prevalent: their lance is doing continual duty. The middle ground between these extremes is the most favorable and most tenable for both doctor and patient. In cases of convulsions, as indicated above, relief has been obtained by surgical interference. Another fact which we know to be true, and which an extensive experience has corroborated, is, that these convulsions, these diarrhoeas, this restlessness and sleeplessness, this worrying and rapid losing of flesh can only be stopped by first and direct

attention to the teeth. Our teething syrup contains no soothing or narcotic principle, but only the chemical elements which go to make teeth, as lime, magnesia, iron, etc. By the vital powers of the system this is transferred from the inorganic to the organic substance. It is indicated where there is no breadth of gums, with pale countenance, flaccid muscles, heated skin and disordered bowels. Giving to such cases the teething material is supplying a deficiency in the food and furnishing it in the best possible form for absorption and assimilation.* A word might be said upon the correct method of

Lancing the Gums. A common method is to push the blade of a gum lance or of a penknife down to the tooth, slitting the gum its full width at the site of the tooth. The objection to this method is that if the knife is moderately sharp, only temporary relief is afforded, because the edges of the wound are smooth and separated but little, if at all. This close proximity favors immediate healing. Besides, the healing causes a scar, which, as trifling as it may be, adds further to the resistance to the crown or point of the tooth.

If you must lance, pray do it scientifically. The best plan we know of, and a simple one it is, is, instead of making one incision, make two, and these at right angles with each other. These may be represented by the letter X, the point of intersection coming as near to the centre of the crown as possible. We have here a wound that will not heal, the little corners in the centre either curling away from the tooth, or shrinking away from the centre, in either case leaving a permanent opening. Occasionally we meet with a gum that is exceedingly tough, hard and unyielding. In such an instance it may be advisable to take out one of the corners entire: thus, X.

All the disorders occurring at this period of life should be treated independently of the irritation in the jaw, and as indicated under their proper head in this work. This, and the supply of the proper material for making teeth, will, in a majority of cases, be all-sufficient. But, rather than have the little one suffer with convulsions,

* This prescription sent free upon receipt of letter-stamp to pay postage.

or with any ailment for a length of time, we must advise, as an additional aid and relief, the lancing of the gums.

INFLAMED OR ELONGATED UVULA.

With all inflammations of the throat, the soft palate and uvula sympathize and seldom escape injury. The uvula needs special mention, for it becomes relaxed or elongated, and may remain so. In such a case the person is harrassed with a tickling in the throat, produced by this organ coming in contact with the back of the tongue. The coughing is noticed more particularly at night, and many a person—and doctor, too, for that matter—has been alarmed at the approach of consumption, when attention to this little tormentor would have allayed all fears and resulted in cure in a few days.

The cough is a peculiar one, and, however severe, does not relieve the throat. No phlegm is expectorated at first, but may follow after a time; being a result of irritation caused by the cough. Upon inspection, the uvula will be found touching the back of the tongue, or a portion lying upon it. In all coughs the throat should be examined with this object in view.

TREATMENT.

When the dropping first occurs, contraction may be produced by gargling the throat with a solution of cayenne. If this does not succeed after a few trials, use a solution of tannin, and gargle the throat every two hours for four or five days. When it can be done, a good plan is to seat the patient upon your knee, and holding the tongue down with your finger, pass a teaspoon half full of the tannin solution into the back part of the mouth, allowing the uvula to lay in it. We have never experienced a failure by this treatment. Still, we believe there are cases requiring surgical care. The end is then clipped off with a peculiar shaped scissors, which is so made as to bring away the separated piece, and prevent an injury to the throat or mouth. Persons should partake of a hearty meal before the operation, because it may be necessary to fast for thirty-six hours.

PHARYNGITIS.

An inflammation of the pharynx is likely to occur upon inflammation of any of the organs of the fauces, on account of the continuity of the mucous membrane which covers them all. An acute attack limited to the part under consideration is rare. If it does occur, the effects may not be distressing enough to require special treatment. There is an uneasy feeling in the throat but no coughing or difficulty in breathing or swallowing. When it extends so as to involve the other organs, then we have special symptoms which indicate this change. What is known as *clergymen's sore throat*, a difficulty to which public speakers are liable, has its origin in this membrane and is an inflammatory action taking place in the mucous glands or follicles. These are swollen, and the raised points can easily be seen by looking through the mouth when the tongue is depressed. Hoarseness is almost always present. The treatment is the same as for acute pharyngitis.

Chronic pharyngitis is exceedingly common. Upon examination, in nine persons out of ten the membrane will present an unhealthy appearance. It is relaxed and has not a uniform color and exudes more or less vitiated mucus. When epizooty prevails among animals, those caring for them may become affected, in which case the pharynx becomes highly inflamed and discharges an excessive amount of corrupt secretion. But as before implied, the affection seldom remains confined to the limits of this part of the throat. The chronic disorder is accompanied with thickening and morbid secretions. These processes will be noticed slowly progressing upward either through the eustachian tube, involving it and the inner ear and producing partial or complete deafness, or upward into the nasal cavity, causing sub-acute or chronic catarrh. With equal facility this chronic catarrhal condition may tend to develop downward, involving the air passages, affecting the vocal cords and the voice, become seated in the bronchial tubes, giving rise to bronchitis, or establish itself in the air-cells of the lungs, developing consumption. In its

downward journey it may leave the larynx intact, involving the œsophagus and stomach, presenting that form of dyspepsia known as gastric catarrh.

TREATMENT. .

As a local disease the best local treatment is the application with a swab or probang of a solution of burnt alum and sweet oil, in the proportion of all the latter will dissolve of the former. The sassafras liniment may be applied to the neck, as in tonsillitis. The pharynx catches a good share of dust inhaled through the nose or mouth—particularly is the latter the target for tobacco smoke and the chute for snuff, and it seems almost unnecessary to remark that these irritants should be avoided. As the chronic form is in most instances a symptom of a scrofulous diathesis or blood condition, constitutional treatment is indicated in order that this fluid may be purified: the different organs should receive proper attention in order that its purity may be preserved.

MUMPS.—*Parotitis*.

This is a tumefaction and inflammation of the paroted gland, situated just under the ear. This gland secretes saliva, which is carried by a minute canal to about the centre of the cheek and emptied into the mouth. One gland or both may be affected. There is heat, redness, swelling and pain. The jaws become stiff, chewing is painful and swallowing difficult. It lasts about a week and occurs oftener in children. The disease has one peculiarity; it may change location. From exposure or other cause it may locate in the breasts of the female or in the testicles of the male.

TREATMENT.

Keep the person from exposure and give calcined magnesia a teaspoonful in sweetened water, if the bowels are constipated. If the patient has a cold or is feverish use the spirit-vapor bath. Internally may be given muriate of ammonia in ten or fifteen grain doses every three hours, or

R.—Tincture of Gelseminum,	.	.	.	two drams,
Essence of Wintergreen,	.	.	.	one dram,
Water or Simple Syrup,	,	.	.	four ounces.

Mix.

Take a teaspoonful every three hours. If metastasis to the testicle occurs treat the same as Orchitis.

INFLAMMATION OF THE TONSILS, QUINSY.—*Tonsillitis*.

As the name implies, this is an acute inflammation of the glands above the roots of the tongue and on either side of the throat. But one is usually affected; both may be and sometimes are. There is pain and swelling, both increasing in severity as the disease advances. Sometimes the pain will dart upward toward the ear or forward along the jaw. As the swelling increases, swallowing becomes more difficult and occasionally respiration is impeded. The person becomes feverish and complains of headache. If the swelling is so great as to interfere with the circulation of blood to and from the head, the aching is more severe. Later, pronounced throbbing is perceived, due to the presence of pus, which points inward. If to the front, a white spot is easily seen. Coughing may be present. On attempting to swallow anything, a spasmodic action of the throat repels it. The inflammation may spread and involve the uvula and soft palate. The tongue is coated, the secretions of the mouth tenacious and the breath fetid.

It is distinguished from diphtheria by the tonsil increasing in size to a greater extent, and by the false membrane of diphtheria spreading in all directions, while in tonsillitis only the white spot or spots which locate the point of exit to the containing fluid are observed and these are stationary and do not spread.

The indications are to relieve the inflammation and, if possible, prevent the formation of pus; if matter does form, to relieve the gland.

TREATMENT.

For those who have periodic attacks of this character, and who are, therefore, able to anticipate it, active medication may thwart its cul-

mination in abscess. These are the employment of a thorough catharsis, counter-irritation upon the neck, by the liniment soon to be mentioned, steaming the throat, by inhaling the vapor arising from boiling hop tea, and by gargling with a strong solution of tannin. Others may not be as fortunate, for the disease is generally well progressed before its real character is discovered. It is caused by taking cold, and the Turkish bath will not only relieve this, but any soreness or uneasiness noticed in the throat.

Bind around the neck one or two thicknesses of flannel. Insert into this, on the affected side, a folded piece of three or four thicknesses which has been saturated with the following liniment :

R.—Oil of Sassafras,	. . .	one ounce,
Olive oil,	. . .	one ounce,
Spirits of Hartshorn,	. . .	one ounce,
Camphor gum,	. . .	one-half ounce.

Mix.

This irritates the surface, producing a flow of blood away from the inflamed gland. Gargle the throat with : tannin, one dram ; water, eight ounces, every hour, or oftener, if preferred. If the feverish symptoms are considerable, give

R.—Veratrum Viride,	. . .	thirty drops,
Tinct. of Wintergreen,	. . .	ten drops,
Water,	. . .	two ounces.

Mix.

Teaspoonful every two hours.

If the bowels are costive, administer a cathartic. If the throat is very painful, it may be soothed by the hop tea, as suggested above. The food should be fluid, taken warm, and given in a bowl, so that the swallowing may continue without interruption until the whole meal is finished ; for it is only the first or second effort that hurts.

If suppuration takes place and throbbing is observed, look for the point or head. If it is discovered, and a proper instrument cannot be obtained, wind twine around the blade of a penknife to within a quarter of an inch of the point, and, holding the tongue down with

the finger, puncture the abscess. If it discharges, the relief is remarkable and immediate. We dislike the use of the lance. We believe the tonsil makes a better and more permanent recovery if allowed to open and discharge of its own accord, which usually occurs at the time of coughing.

In persons of a scrofulous diathesis not only is the disease likely to recur, but considerable enlargement of the gland remains. The treatment then becomes more of a constitutional than of a local nature. This is presented at length under the head of *scrofula* to which the reader is referred.

CHOKING.

When a fish-bone lodges in the throat, or, in the case of children, as sometimes happens, a pin or needle, a smart blow or hand slap upon the back may dislodge it. In adults great efforts should be made to stop every inclination to swallow, and by coughing or placing the head low and making an effort to vomit, the substance may be dislodged. If this is not effectual, remove it with a common spring forcep or a pair of pincers, being careful not to include any flesh in the teeth of the instrument. Needles can be removed with a load-



FORCEPS.

stone. If no such instruments are at hand the thumb and finger must be used. Whatever is done must be done quickly.

At times a large piece of meat may, in the act of swallowing, become fixed in the throat. If this presses upon the top of the air-passage, suffocation will soon follow; time is precious and lives have been lost in the fruitless attempt to secure the bolus and *extract* it. Immediately seize a fork or spoon and with *the handle* try to push the meat downward and backward; downward at least, if you

cannot get the proper purchase. A removal of half an inch will free the air-passage, and, to a great extent, the imminent danger. Sufficient time is now given to complete the relief.

Occasionally it will pass completely beyond the air-passage but fail to descend the œsophagus or food passage.

All effort at swallowing is abortive. Fluids will return to the mouth or more generally find exit through the nose. There is little pain and but slight discomfort; still the countenance assumes an expression of great fear and impending danger. Relief can only be had by continuing the pressure upon the mass until it lodges in the stomach. Cover the blunt and smooth end of a piece of round whalebone or stout wire, *well oiled*, with two or three thicknesses of cotton cloth, and firmly secure with cord. This will prevent slipping. Having commenced the pressure, continue to apply it (the head being well turned back upon the spine) until it enters the stomach. This may be known, by success in swallowing water.

SNORING.

In introducing this subject we do not mean to imply that it is a disease. The party indulging has little knowledge of the event. But as it is universally voted by the audience, who unfortunately are usually compelled to listen, "as worse than the itch," we give this subject notice. The mechanics involved are simple. Like the reed upon the accordion, the uvula hangs from one side, in a narrow passage-way through which air is passing to and fro. This causes a vibration, and vibration is sound. The conditions necessary are complete relaxation, so that the jaw drops, and profound sleep; like that following severe labor. These conditions are not necessary, however, when breathing through the mouth has become a habit. When the air passes through the nostrils and pharynx into the lungs, it passes down behind the uvula without disturbing it. Hence it will be seen that if the mouth is closed, snoring is impossible. To prevent this a night cap should be worn having a tab passing down the face in

front of the ears, which will button or tie with tapes, thereby incapacitating the wearer from opening the jaws.

DIPHTHERIA.

This disease may have been in existence for a great length of time, but only during the past decade has it been separated from diseases of a similar nature, and classified as a distinct affection. The disease may appear in an isolated case, may occur as an epidemic, and is always considered contagious. It closely resembles, in the inflammation of the throat, tonsils and contiguous parts, membranous croup; and in the blood-poison, erysipelas or scarlet-fever. The person experiences fever or chill or alternate chill and heat, and great physical depression. The tongue is coated, breath foul and throat sore. In slight cases the sore throat may constitute the whole difficulty. In a short time little whitish spots appear upon the inflamed surface, which spread rapidly, covering the whole mucous surface with a tough thready membrane. This is white at first, but soon becomes grey and then black, on account of atmospheric action and the admixture of blood. In severe attacks it is spread over the larynx downward through the air passages, sometimes reaching the minute bronchial tubes, and may be generated upon all mucous surfaces and canals, even lining the blood vessels. This would seem to indicate that the disease is a constitutional one, and if it is cured by local treatment alone, we believe more or less of the remedy must have been swallowed or absorbed. Its violence may produce palsy of the mouth, tongue and limbs and perhaps occasion loss of voice.

It is distinguished from membranous croup, by the coughing in the latter, sharp and 'croupal;' the change of voice and the paroxysms of difficult breathing. From whooping-cough by the fever and false membrane which occur only in the former; and the whoop, the characteristic sign of the latter. In scarlet fever the throat is sore, but there is a scarlet blush and rash and the absence of a membrane.

The indications are, to reduce the fever; destroy the blood-poison; detach the membrane and support the strength.

TREATMENT.

That recommended for croup is suited to most mild cases; we refer to the blood-root tea and cider vinegar. This with a nourishing diet will meet all the indications. Our plan is to give two or three drop doses of veratrum in water every hour or two till the pulse falls to eighty or seventy. To remove the membrane we employ the probang supplied with a sponge or a brush made by tying to a stick a piece of linen, the edge of which has been raveled, and with it swab out the throat with the following:

R.—Pinus Canadensis, ... one dram,
Hot Water, ... one ounce.

Mix.

Dissolve by stirring and use when cold every half-hour. It does no harm to swallow it. Around the neck may be placed a flannel bandage and the sassafras liniment applied as directed in the treatment of tonsillitis. See page 421. This treatment is specific.

As a gargle when no better means are at hand the clear juice of a lemon or two is advisable. If a drug store is near, chlorate of potash can be procured and a strong solution made by pouring on hot water. When cooled sufficiently gargle the throat, of if the patient is a child use with a swab.

The mouth should be well cleansed with the chlorate of potash solution or with chlorinated soda immediately preceding each administration of medicine, food or drink.

INFLAMMATION OF THE GULLET.—*Œsophagitis, Aphagia.*

The œsophagus is the tube connecting the mouth with the stomach. Seldom is there an inflammation of this organ unconnected with adjoining parts. Such, however, follows the introduction of corrosive poisons and the lodgement of foreign bodies in the passage.

False teeth are frequently caught and sometimes with fatal results. The lining membrane is sometimes injured by the probang or stomach pump. Swallowing hard substances or hot drinks may inflame. The pain cannot be located by the patient but is described as being inside and somewhere between the breastbone and spine. The treatment consists of teaspoonful doses of glycerine and fluid food, with slippery-elm tea as a drink.

Foreign bodies in the œsophagus are not so rare. As observed, false teeth often become fastened, usually near the stomach. In case of thickening of its walls even food may be stopped. When the canal is partly closed, fluids will pass with pain and difficulty, but when the closure is complete swallowing is impossible. Cancer of the stomach, about the end of the œsophagus, causes stricture and eventually closure. Foreign bodies may be dislodged by full draughts of elm-tea. If they pass into the stomach keep on giving the tea and administer a cathartic. If the drink has no effect, give an emetic, or with the head dependent, tickle the fauces until emesis results. In dangerous cases the surgeon employs tongs shaped for the purpose, or a probe with flexible handle and stem long enough to reach into the stomach. At the end of the stem is a ball to which a circle of bristles is tied with ends directed backward and outward. It is readily passed into the stomach; the reverse motion, it is evident, must carry all before it. In case of stricture only fluid food can be swallowed. When meat closes a strictured œsophagus it may be digested where it is by pepsin. In complete closure the food must be fluid and forced into the rectum. In this way life has been prolonged for months.

Persons who have taken poisons may be able to swallow but will not. Tie their hands behind them, pry open the mouth and pass an emetic through a catheter into the œsophagus. The catheter will answer the same purpose if introduced through the nostril.

Spasmodic stricture, or temporary inability to swallow, is a symptom of some diseases. Among these may be named, flatulence, angina of the heart, hysteria and spinal irritation.

False teeth, fishbones, pins, needles, coins, etc., lodged in the throat may be removed by pounding upon the upper part of the back while bending the body forward. Another way is to open the mouth wide in a strong light, grasp the tongue with a napkin and pull well forward and use forceps or pinchers. A hook may do to carry it to the mouth where it is under control.

ORDER VI. DISEASES OF THE HEART.

CARDITIS.

The inflammatory diseases of this organ are divided into *Pericarditis* or inflammation of the covering, to *Myocarditis* or inflammation of the muscular substance, and to *Endocarditis* or inflammation of the lining of the heart.

Pericarditis closely resembles pleurisy both in the pain, tenderness on pressure and rapid pulse. It may be followed by adhesion and dropsy. The treatment is principally the same as that for pleurisy.

Myocarditis differs but little from the above and its pressure is difficult to detect during life. The substances being continuous with the covering and lining, the treatment of the Peri or Endo-carditis whichever is more prominent, will meet this condition.

Endocarditis presents an important study and has a critical significance to the sufferer. This disease is most frequently brought about by metastasis or change of seat of rheumatism. When rheumatism attacks the heart there is great danger to life. It may also have its origin in Bright's disease of the kidneys. By placing the ear upon the chest and listening to the heart-sounds, a blowing sound or bellows murmur is often heard. Unless the inflammation is soon arrested, false growths may arise upon its surface, or the valves of the organ become involved. These shreds are products of inflammation and sometimes become loosened and are carried along in the blood. When of any considerable size they may produce obstruction more or less complete causing a disease designated *Embolism*. Endocarditis involving the valves of the heart may so alter their structure as

to interfere with their normal action. One result is that upon contraction of the heart to propel the blood forward, a valve only partially closes, and hence a portion of the circulating fluid is forced backward (regurgitated).

As this condition is usually associated with or caused by rheumatism it is often that proper treatment for rheumatism will remove both the danger of this complication or shorten its duration. In only a few cases have we met the disease and then only when coming from the hands of another physician: never when first called to treat a rheumatic fever. In addition to the treatment prescribed for rheumatism, a mustard paste may be applied over the heart and removed before blistering, to be re-applied as the surface pales. The chest should be covered with flannel and not removed until the heart-symptoms have disappeared.

A common result of inflammation of the heart is *Hypertrophy* or enlargement and thickening of the organ and is combined with regurgitation. It may arise from other causes, as dissipation or over-exertion. It is a common disorder among athletes and professional rowers, runners, etc. Enlargement from these latter causes is technically termed *dilatation*.

The treatment consists first and principally in rest and avoidance of stimulants. Secondly, in the administration of a heart-regulator or a tonic.

Another result of inflammation of the heart, its lining or its covering, is that in which the muscular fibres become altered and their place taken by fatty matter. This is called *fatty degeneration*. It is a disease of the aged and has no known remedy. The heart is soft and flabby and any undue excitement or over-exertion may terminate life. When this condition is present the inhalation of chloroform is particularly hazardous.

ANGINA PECTORIS is a heart difficulty attended with severe pain. The attack is sudden, with tearing pains in and around the heart, sometimes extending along the left arm, with great prostration, pale and anxious countenance and a feeling of alarm, as though every

throb would be the last. If the person survives the first attack there is a probability of its repetition when all the symptoms are likely to be intensified. The profession have long been taught that inhalation of nitrite of amyl or of chloroform, is advantageous, but recently it has been discovered that angina will readily yield to tincture *Cereus Bonplandii*, given in five to ten drop doses, every hour or two, according to the severity of the attack. Severe pains about the heart when not associated with organic diseases, will yield to the same treatment.

PALPITATION OF THE HEART accompanies enlargement, but is more frequently symptomatic of some disease or derangement that has a debilitating effect upon the nervous system. Palpitation is connected with asthma and with hysteria.

In *Globus Hystericus*, palpitation is the principal symptom, and patients complain of the throbbing and the feeling as if the heart was rising into the throat and choking them. There is a continual effort of swallowing; the throat being dry and husky. It occurs principally in females, and in the greater number of cases is dependent upon some disorder of the reproductive organs. The disease is of the nervous type, and when this system is quieted all heart symptoms subside. We seldom find change in the organ itself. We see violent throbbing or palpitation of the heart in dyspepsia, particularly in nervous dyspepsia if combined with distention of the stomach by gas or wind. A few drops of peppermint essence in warm water, afford immediate relief.

In debility from wasting diseases, such as consumption and long continued fevers, slight exertion brings about difficult breathing and heart-throbbing. This, however, is a very mild form of palpitation and may be alleviated by rest. In every instance the treatment should be wholly directed toward the special disease causing that disturbance.

Closely allied to disease of the heart is a peculiar disorder of the principal artery, the aorta. The coating of the artery becomes weakened and yields, forming a large sack upon one side. This is known

as *aortic aneurism*. The principal symptoms are the bulging of the chest in the heart region and marked pulsation. It is not easily diagnosed, even by the physician, and as relief is extremely doubtful the subject is dismissed without further consideration.

BLUE DISEASE, BLUE JAUNDICE.—*Cyanopathy, Cyanosis.*

The name is given to a condition in which the whole surface is colored blue, the shade deepening slowly, and as gradually disappearing. The color comes from the blood, which, on account of imperfect aëration, or oxygenation, retains its blue color. The cause is organic deformity in the heart or pulmonary blood vessels. There is communication between the right and left side of the heart before birth, and this is supposed to close with the first breath. When it remains open or is reopened by accident, or when the blood is intercepted or impeded in its way to the lung, blue disease results. Sudden change of position, uncommon exertion or exercise, the emotions, and all causes that increase the activity of the heart or circulation, occasion an attack.

TREATMENT.

It will be useless to look to medicine for assistance. At birth much can be done by position. Laying the infant upon the right side on a slightly inclined plane, the feet being lowest, facilitates the closure and normal circulation. Rest and quiet are necessary. Care and attention must be unremitting. From some imprudence or accident in early life, persons so affected rarely reach mature age.

FAINTING, SWOONING.—*Syncope.*

This condition differs widely from that below described. Here the blood leaves the brain, or is not supplied properly. The person suddenly becomes pale and falls, losing sensation and the control of the muscles. The heart beats feebly, and the breathing appears to be suspended or is carried on tardily. It is a symptom of a weak condition of the nervous system, and finds its cause in whatever tends

to produce this debility. Protracted fever, great loss of blood in labor, or by other means, will sometimes cause alarming fainting. The syncope frequently recurs, even during the use of the more common restoratives. Some are so constituted that they cannot bear the sight of blood, the smell of disagreeable odors, or any unusual surprise, or other source of mental emotion, without fainting. Severe pain will sometimes produce faintness.

TREATMENT.

But little else needs to be done than give nature an opportunity to restore the circulation of blood. This is best accomplished by laying the person down upon the floor, ground, or any level place that is near by and convenient. Do not keep a fainting person sitting in a chair and expect by vigorous fanning to resuscitate. Place upon the back, the first thing, and they will revive in less than half the time. A place near a window or door, or in the open air, is preferable. Water sprinkled or snapped from the fingers upon the face is effective. Hartshorn or smelling salts applied to the nostrils arouses consciousness. Stimulants may be administered as soon as the patient is able to swallow ; or

R.—Compound Spirits of Lavender,	one ounce,
Chloroform,	one dram.

Mix.

Give a teaspoonful in a little water, and again in fifteen minutes, if thought necessary. In common cases it will not be needed, but in repeated faintings, following loss of blood, every effort must be made to sustain the flagging vitality.

GIDDINESS, DIZZINESS.—*Vertigo*.

Vertigo is only occasionally caused by disease of the heart : however, we will discuss the subject under this order.

By some the name of "swimming of the head" is given more, we fancy, from the swimming of objects in a whirlpool, than any appearance of the head in contact with the water. All the terms imply motion.

External objects appear to turn round, or the person feels as if the head was rotating. This confusion results from a rush of blood to the head ; for a moment the individual is unable to collect himself so as to have any consciousness of what is happening around him. He feels the sudden attack, and endeavors to reach something to which to hold fast until the spell passes: if he fails to catch, or if the attack is uncommonly long or severe, he falls to the ground. It is rather a sign of disturbed circulation than any dreadful disease, either present or to be apprehended. Persons subject to vertigo much dislike to travel, and seldom leave the house without an associate. Dizziness may be experienced by any one upon suddenly rising from bed, or after stooping for some time. Of course, the plethoric or full-blooded are more liable. We may expect vertigo to accompany some of the following diseases: indigestion or dyspepsia, mental and nervous prostration and exhaustion, congestion of some of the internal organs, feeble heart, constipation, and brain disease.

TREATMENT.

The disease or condition which causes it must be removed. If it results from stooping or bending over, but little attention need be paid to it further than to be cautious at another time, and rising up slowly. Habit has much to do with our ability to congest the head without losing consciousness. Not every one may "gather shells upon the shore." The dyspepsia and constipation will probably need magnesia and nux vomica, or other bitters; the weak heart, belladonna and tonics; the exhausted, rest, phosphorus, strychnine, or bromide of ammonia. In all is needed an active circulation, such as will dispel local congestion and remove this tendency toward the head. Keep the feet warm by gentle exercise or by rubbing, dress so as to distribute the heat evenly over the body, avoid all excitement or fatigue, and partake of light diet.

ORDER VII. LUNG DISEASES.

COLDS AND COUGHS.

"Colds are caught," is a common expression, but from the frequency with which they occur and the multitude who possess them, we are almost justified in making the assertion that colds are *sought*. If not sought, it is very apparent that but little attention is given to the matter of avoiding them. Almost without exception we take cold from the sudden lowering of the temperature of the body, either in whole or in part. There has been vigorous exercise or labor, at least sufficient to bring about sensible perspiration. Up to this point the function is normal and its effect conducive to health. On account of clothing the feeling is uncomfortable and a draft of air or shady retreat draws us away for rest and cooling. The rest is proper but the perspiration should be evaporated but slowly.

It is not meant to declare that in every instance the actual motion of the air is necessary to produce a cold, for it can easily be demonstrated that the difficulty lies principally in a considerable but sudden change of temperature. The farmer in a hay field rests from his labors by reclining upon the damp ground in the shade and falls asleep. The parts likely to be chilled are those which touch the ground. The merchant, after a hasty walk, lays aside his overcoat and sits in a cool office. The friend parting with his companion may stand a half hour upon the sidewalk in winter, his feet becoming chilled. The driver will sit upon his seat in a drenching rain until the chest is chilled. The dancer leaves the waltz and seeks the open window. The high temperature of our dwellings and the still higher

thermometric indications of the church, theatre, lecture-room, etc., are quit without that care and proper appreciation of the great difference which usually demands one or several extra articles of clothing. Granted that the skin is not super-sensitive, it is a fact that it is almost impossible to take cold while the body is active. The driver should leave his seat occasionally and walk or trot at the side of his horse. The farmer, the dancer, and others similarly situated, should keep up a general motion of the body, such as walking, until the surface is cooled.

A little care here will save much trouble and sickness. Try and bear this in mind. When entering an edifice likely to be crowded and hence over-heated, remove the shawl or overcoat, which should be replaced before going outdoors. If possible, better cool off in the same room before leaving. A few minutes time will be sufficient. If the overheating arises from outdoor labor, or even indoor work, do not seek a window or draft of air. Warm mufflers worn about the neck do not protect you from taking cold, but, on the contrary, render you extremely liable to take cold as soon as you take them off. They make the throat tender. Ladies ought to wear warmer flannel underclothing than they do, if one may judge from the articles one sees hanging in the show windows of the shops. People take cold from inhaling cold air through their mouth oftener, perhaps, than by any other way. Ladies dress themselves up in heavy furs, go riding in their carriages and when they get home, wonder how they took that cold. It was by talking in the cold open air, and thus exposing the mucous membranes of the throat. The best protection under such circumstances was to keep the mouth shut. If people must keep their mouths open in a chilly atmosphere, they ought to wear a filter. Above all, be careful of your feet in cold, damp weather. Have thick soles on your shoes, and, if caught out in the rain, which lasts so long as to wet through your shoes, despite the thick soles, put on dry stockings as soon as you get home. But in cold, wet, slushy weather do not be caught out without overshoes. Rubbers are unhealthy, unless care is taken to remove them as soon as you

get under shelter. They arrest all evaporation through the pores of the leather. Cork soles are a good invention. When you go into the house or your office, after being out in the cold, do not go at once and stick yourself by the register, but take off your coat, walk up and down the room a little and get warm gradually. Warming yourself over a register just before going out in the cold is one of the worst things that you can do.

While most colds are unaccompanied with cough, a cough is not always an index of a cold. Any irritation of the windpipe (larynx and trachea), will cause a cough. The lodgment of dust upon the air-passage has a similar effect. Dyspepsia is often indicated by this symptom; so is menstrual derangement; likewise spinal irritation, and, as we have noticed in another place, elongated uvula. This symptom is of value to the physician, but to those unlearned in medical science, it has a value only as indicating an organic difficulty. The connection between the two is by and through the nervous system; principally through the sympathetic and pneumogastric nerves.

All colds effect the system but in one way, namely by contracting the skin. The blood is forced from the surface and some internal organ congested. The congestion usually takes place in the weakest organ, whether it be the throat, the lungs, the kidneys or what not. It is noticeable that in addition to uniformly congesting the same organ, that with each attack the organ in question is weakened, and hence colds are more easily taken. Another point worthy of mention is, that at the outset the congestion is very easily removed and conversely that it becomes more difficult the longer its duration, terminating eventually in active inflammation. Even so serious and dangerous a disease as pneumonia is a simple cold at its inception. Catarrh, which, once established in our northern latitudes, is likely to continue through life, commences in so simple a manner.

TREATMENT.

So ready a means as a Turkish bath, or the use of a spirit-bath combined with some warm drink such as hot milk, spiced with pep-

per, will re-establish perspiration, thus opening the pores and relieving the internal congestion.

As the serious diseases to which colds may lead are treated under their respective headings, we have a few words only to say, upon the methods to be adopted where relief is wanted from some annoying or distressing symptom.

Where sneezing is persistent chloroform may be inhaled or opium taken by the stomach, in two grain doses, every two hours until relief is afforded. Where a catarrhal discharge is excessive and acrid, a teaspoonful of glycerine may be added to a cupful of warm water, and a teaspoonful poured into the palm of the hand and snuffed up the nostrils. The feeling of tightness in the forehead is relieved by anointing the forehead and nose with pure glycerine. The stuffed-up feeling in the nose (diminished smell) is readily relieved by inhaling (smelling), the vapor of the spirits of camphor from the mouth of a bottle containing it.

The hacking, which hardly amounts to a cough and hoarseness are sometimes the precursors of pneumonia. It may however be but a trifling affection of the throat. It is easily relieved by inhalation of the vapor of tar, by means of the Pocket Inhaler. (See page 440).

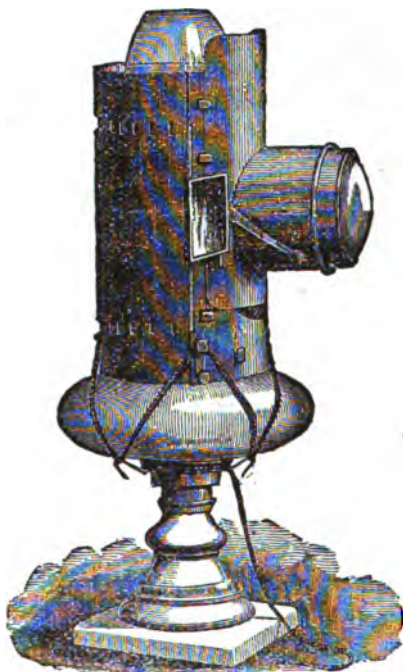
Our favorite cough syrup has several qualities to recommend it: it is simple, pleasant, inexpensive and effective. We do not declare it to be the best in the world, but we have yet to meet its rival in curing common coughs and colds. Neither have we any intention of warranting it to cure consumption, as most cough remedies are now-a-days advertised to do. The formula is

R.—Tincture of Lobelia leaves, . . .	two drams,
Tincture of Bloodroot, . . .	one dram,
Tincture of Tolu, . . .	two drams,
Essence of Wintergreen, . . .	thirty drops,
Simple Syrup, enough to make . . .	four ounces.

Mix and take a teaspoonful every two or three hours,

INFLAMMATION OF THE LARYNX.—*Laryngitis.*

The apparatus which modifies the air we breathe so as to produce voice, is the larynx. It is situated at the front of the neck, its projection being familiarly known as Adam's Apple. Within are the vocal cords, and any disease which would alter the structure of these organs would be expected to change the voice, which it does. The hoarseness from taking cold denotes a mild form of laryngitis. With it we have a tickling sensation or irritation in the windpipe, cough, but little expectoration, and some difficulty of swallowing. This may all subside in a few days if treated as a cold.



LARYNGOSCOPIC LANTERN.

If the inflammation is more pronounced, the difficulty of breathing becomes more pronounced, with wheezing, and voice may be lost. The cough is distressing and painful, fever supervenes, inflammation is high, and parts are tender to the touch. It is then dangerous, and may result in strangulation. It is a disease of adults, and closely resembles croup in children. The young may have laryngitis from the lodgment of a foreign body in this organ.

In chronic laryngitis the voice is modified or lost, and may remain so from change of structure. Ulceration and thickening

are not uncommon. The cough and expectoration resemble bronchitis and consumption. Laryngitis may coëxist with consumption in its later stages, and is frequently met in advanced syphilis.

Not all the diseases in which loss of voice occurs are structural. For the nervous affections, see under head of Aphonia.

It is distinguished from tonsillitis or quinsy sore throat, in which there is difficulty of swallowing, by the pain being higher up, and by the enlarged glands, which can be plainly seen upon inspection of the throat. In pharyngitis there is also pain in swallowing, but there is no alteration of voice. The voice is altered in croup, but there is no pain in swallowing. The cough resembles that of bronchitis and consumption, but in laryngitis the lungs will be found by auscultation to be normal. The condition of the part and the presence of ulcers, tumors, etc., are best ascertained by the use of the *laryngoscope*. This instrument simply consists of a small mirror supplied with a long handle. This is placed in the back of



LARYNGOSCOPIC MIRROR.

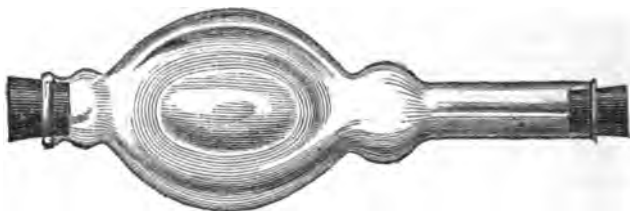
the throat, and reflected and concentrated light thrown upon it. The image of the upper windpipe appears in the mirror, and the part can be carefully and thoroughly examined.

TREATMENT.

In the acute form it is only necessary to follow the instructions given elsewhere for the management of a cold. A wet compress may be bound around the neck, and allowed to remain during the night. If the hoarseness continues,

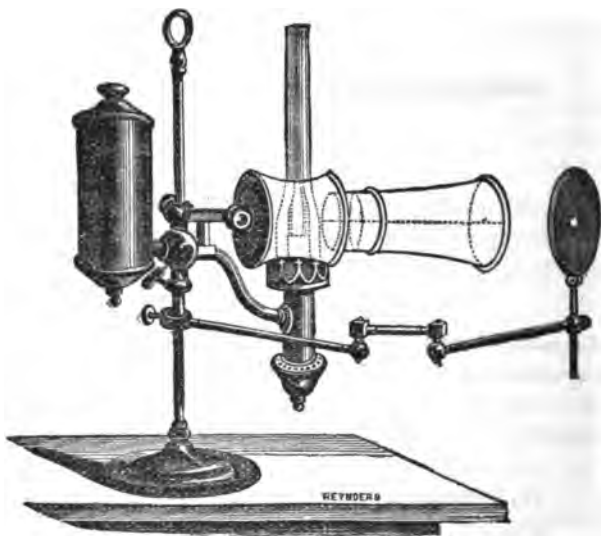
R.—Oil of Tar,	.	.	.	.	.	ten drops,
Oil of Fleabane,	.	.	.	.	.	five drops,
Alcohol,	.	.	.	.	.	four ounces.
						Mix.

Drop upon the sponge of a Pocket Inhaler some fifteen or twenty drops, and gently inhale for five minutes every two hours. This is a



POCKET INHALER.

matter of strong practical interest to singers and speakers who wish to clear the voice in the shortest possible time. With an atomizer the time taken in affording relief may be greatly shortened. Put twenty



TOBOLD'S LARYNGOSCOPE, ADJUSTABLE TO A STUDENT'S LAMP, WITH REFLECTOR FOR CONCENTRATING THE LIGHT UPON THE *Mirror* IN THE THROAT.

drops of the above recipe in an ounce of hot water and inhale the medicated vapor for five minutes, repeating in a quarter of an hour.

During this treatment the voice should be tried as little as possible and just before public appearance swallow a small portion of capsicum, or better, allow a cayenne lozenge to dissolve in the mouth as a stimulant.

Chronic Laryngitis, in a majority of cases is catarrhal in character and is not confined to the larynx but extends downward along the trachea to the bronchi or upward to the pharynx and nasal cavity. Our treatment varies but little from that for catarrh; by medicated spray from an atomizer. When the difficulty of breathing is great the liquid should be as hot as can be borne. Ulcers, tumors and such serious conditions, it is needless to say, require the physician's skill.

CROUP.

Croup is of two kinds, the false and the true. In the former there are feverish symptoms and hot skin, flushed face and frequent coughing, which is hoarse, as noticed usually with a heavy cold, but in addition, is accompanied with a loud shrill noise at each inspiration. This sound, so peculiar, is the characteristic of the disease. The paroxysm comes on without warning, except it may be a slight indisposition manifested by restlessness upon retiring; the child waking up suddenly, alarmed and distressed for breath. After a while this spasmodic action of the larynx subsides and the child falls asleep. The attack may be repeated later in the night or at the same hour the ensuing night. In the interim all symptoms of the disease and generally of any disease of the throat are wanting.

True croup is better known as membranous croup. There is some spasm, but the principal feature is the amount of inflammation in the throat, which inflammation throws off a false membrane. This membrane not only covers that part of the throat which can be seen but extends downward into the bronchial tubes. The symptoms, particularly at the outset, are identical with those of false croup,

but differing in intensity. The hoarse voice, the difficult breathing, the ringing cough, the crowing expiration and high fever are present. As the disease advances, appetite is lost, the voice hoarse at first, becomes less and less distinct until finally it is destroyed. The cough may at times dislodge pieces of the membrane but, unless relief is had, the air passage is closed and the child dies of suffocation.

This dangerous affection cannot be confounded with false croup when it is remembered that the false variety occurs only at night and ceases altogether in from two to five or six attacks. The membranous progresses steadily to its termination; the hoarse voice and difficult respiration are always present; paroxysms occur both by day and by night and the only sure symptom, false membrane, is expectorated.

It is distinguished, without much difficulty, from diphtheria, which it closely resembles, as both diseases are accompanied with false membrane and high inflammatory action with fever, thirst, etc. But in diphtheria we miss the sharp cough, the husky voice and the paroxysm of difficult breathing. In whooping-cough the voice is unchanged, there is no fever, no false membrane, and there is the characteristic whoop, absent in croup.

The indications are to overcome the spasm, to reduce the inflammation, and prevent the formation of membrane.

TREATMENT.

Whether the disease is the true or false, give five to ten drops of tincture of lobelia in sweetened water, every fifteen or twenty minutes. If the difficulty of breathing is great, the dose may be doubled and vomiting provoked. In the false variety, after the vomiting ceases, the child sleeps, and it is the last of the disease. If there is considerable fever, the membranous variety may be suspected, and in this case broken doses of veratrum, say one-half to one drop every hour may be given till the pulse falls to its natural standard. This treatment will destroy inflammation and with it the exudation or formation of this false material. A good treatment where these remedies are not to be had is to use bloodroot. Take a dram of pulver-

ized bloodroot and pour upon it half a pint of boiling water. Cover closely and allow it to steep for a few minutes, then add half a pint of good cider vinegar. Part of this sweetened in sugar may be given in teaspoonful doses as often as the child wishes or will receive it. It hardly ever sickens or produces vomiting. The acid acts chemically upon the membrane; locally while being swallowed, and by absorption into the blood after reaching the stomach. In the blood it prevents its future formation. The bloodroot reduces the circulation, has a tonic effect upon the mucous surface of the air-passages, and is an anti-spasmodic.

CROWING DISEASE, FALSE CROUP.—*Asthma Thymicum, Laryngismus stridulus.*

This affection occurs generally in infants and generally about the teething period. There is a spasmodic closure of the air-passage and great difficulty of breathing. In this it resembles the asthma in adults. When the breath is inspired it is attended with a loud whistling or crowing sound, giving it the familiar name of crowing disease. The spasms are more noticeable upon waking, crying or swallowing. The fit of suffocation, or the convulsions following, may end life. The disease is comparatively rare, attacks suddenly, lasts but a short time, and is seldom fatal.

Treatment.—The remedies used should be the same as those employed in the treatment of spasmodic croup, which it resembles in many particulars.

LOSS OF VOICE.—*Aphonia.*

There are several diseases in which the voice is lost. A common example is a cold, where hoarseness or roughness of voice follows, or it may increase in severity until the only communication possible is by a whisper. This is of little consequence and is soon regained. In hysterical females the voice is sometimes wanting. An electric shock is likely to suddenly recall it. When it occurs from some disease of the larynx it is of a more serious nature. There are many

local diseases of this organ but the particular one in question can only be definitely determined by the use of the laryngoscope. Paralysis may and often does produce aphonia. In this instance it is usually relieved by electricity. The voice may be lost by powerful emotions, and is sometimes, strange to say, recovered in a similar manner.

BRONCHITIS.

This is an inflammation of the lining membrane of the air-tubes connecting the throat and lung substance. A "cold on the chest" may be a slight bronchitis; it may be acute and severe, dangerous in infancy and advanced age, or chronic, lasting for years and terminating in consumption. The cold settling in this locality differs from others in the deep seated pain and raw feeling, the greater amount of coughing required to dislodge mucus and the hoarseness. The *acute* disease is more formidable. There are chilly sensations, fever, headache, constipation, loss of appetite, thirst, difficult and noisy breathing, hoarseness with dry, harsh and painful cough, followed in a few days by mucous expectoration, sometimes streaked with blood, and general depression. It sometimes follows scarlet-fever.

The chronic disorder is too frequently the result of a neglected cold. Through the summer but little is thought of the slight cough, but as soon as the cold weather sets in, the symptoms are aggravated and the invalid seeks the physician. It is then discovered that a seated catarrh of the bronchial mucous membrane exists. Colds are easily and frequently taken and the cough and expectoration increased; the strength is failing, the appetite poor, bowels constipated and voice changed. When the expectoration is scanty, it is termed *dry*. It may exist for months or it may terminate in consumption. It is a common complication of Bright's disease of the kidneys.

It is distinguished from whooping-cough by the absence of the whoop, the difficult breathing between the spells of coughing and the fever. In pneumonia the breathing is rapid, in bronchitis diffi-

cult and harsh, and in pleurisy feeble, with an effort to limit or control the volume of air inspired. Thus much as far as children and the acute attacks are concerned. Chronic Bronchitis is more frequently associated by the people with consumption on account of the cough and expectoration. The family history will help us in forming a correct opinion, the occurrence of hemorrhage and hectic fever shed additional light and the dull resonance upon percussing the consumptive lung discriminate against bronchitis.

The indications are to diminish fever, reduce the bronchial inflammation, loosen the cough and expectoration, destroy the tendency to take cold and tone up the system.

TREATMENT.

Acute attacks may be treated the same as colds, that is by the spirit vapor bath, by warm herb teas, a hot pack to the chest or by one of these and a cough syrup, such as

R.—Tincture of Lobelia leaves,	. . .	two drams,
Tincture of Bloodroot,	. . .	one dram,
Tincture of Tolu,	. . .	two drams,
Simple Syrup,	. . .	sufficient to make four ounces.

Mix.

Tincture of wintergreen, thirty drops, may be added as a flavor. A teaspoonful is a dose for an adult and may be repeated every two or three hours. This treatment will favorably affect the fever, or aconite or veratrum may be used for the same purpose. Much relief is afforded by anointing the chest with a mixture of quinine, one dram, lard (unsalted), one ounce or with the antiseptic ointment.

In the chronic form we have little fever and but slight inflammation. Complaint is chiefly made about the frequent colds taken. Our advice is to throw away that muffler about the throat and shoulders and put its equal weight in leather upon the soles of the boots; a cork insole is additional assurance. Frequent foot-baths and a chest-bath daily upon rising followed with brisk friction, together with daily outdoor exercise, develops a constitution proof against

colds. To allay the irritation and cough, heal the throat and lungs, and induce free respiration and rest,

R.—Canada or Fir Balsam,	. . .	one-half ounce,
Alcohol,	. . .	eight ounces,
Pulverized Licorice,	. . .	one ounce,
Tincture Ipecac,	. . .	one-half ounce,
Tincture Lobelia,	. . .	one-half ounce,
Tincture Capsicum,	. . .	one dram,
Simple Syrup,	. . .	one pint,
Water,	. . .	one pint.

Mix.

Dose, a teaspoonful every two or four hours.

In place of the above, or in alternation with it every other week, may be used a "Cherry Pectoral" without a rival:

R.—Syrup of Wild Cherry,	. . .	five ounces,
Tincture of Bloodroot,	. . .	one ounce,
Tincture of Black Cohosh,	. . .	one ounce,
Wine of Ipecac,	. . .	one ounce,
Morphine,	. . .	four grains.

Mix.

Dose, a teaspoonful every two, three or four hours. If it is desired to promote expectoration, make twenty pills of the following recipe and take one, three or four times a day:

R.—Pulverized Ipecac,	. . .	ten grains,
Pulverized Lobelia,	. . .	ten grains,
Pulverized Capsicum,	. . .	four grains.

Mix.

With many, emaciation and loss of strength, are the conspicuous symptoms. Under such circumstances we cannot too strongly recommend the use of the hypophosphates combined with wild cherry and cod-liver oil, referred to at length in the essay upon consumption. The combination is so formed that the presence of the oil is entirely disguised; this drug, as usually prepared, turns the stomachs of

the majority. With this compound and the application of nebulized liquids by the spray apparatus, most cases can be cured, (see Catarrh.) In all diseases of the lungs and air-passages the most sensible and most effective plan of treatment is by *direct* medication. Bronchitis, consumption and catarrh, formerly so slow to move, now exhibit remarkable changes in a few weeks. To this point the medical profession must ultimately come.

WHOOPING-COUGH, HOOPING-COUGH, CHIN-COUGH.—*Pertussis*.

This is a cough peculiar to infancy and childhood; rarely attacks adults. It is considered contagious, but fortunately seldom occurs but once. A cough having nothing uncommon at first, is noticed in a week or ten days to become more severe and protracted. The child appears unable to get breath for a painfully long time. The face is bloated and red with blood during the paroxysm, blood-vessels distended, eyes prominent. The child runs and grasps its parent or nurse and, after several convulsive expiratory efforts, a deep, peculiar, noisy inspiration follows and perhaps a little mucus is raised. This rapid and sonorous inspiration is called a *whoop* and gives the name to the disease. These paroxysms, so distressing both to the patient and observer, may occur only in the evening, or three or four times daily, if the case is a mild one, or when severe, every half-hour or oftener. It lasts one or two months and gradually wears away. It is seldom dangerous, and only becomes so when some complication, like pneumonia, sets in. It racks and strains the system severely, and we believe may lay the foundation for lung and brain diseases, although it may not actually produce them.

How the disease first arises we do not know positively, but we do know that it is very readily conveyed and that in a great number of cases it is easy to trace the channel through which it has been communicated; hence we must draw an inference unfavorable to the carelessness of parents, particularly when the disease is known to be in the neighborhood.

Respecting the cause, we are inclined to agree with Dr. Tschamer, of Gratz, who has discovered that a fungus grows upon the skins of apples and oranges, precisely similar to the fungus which forms the peculiar germs of infection in whooping-cough. He writes that on oranges and apples which have been kept some time, may be found dark brown and black specks, which, when scraped off, appear as a damp powder. Under the microscope this powder is seen to consist of the spores of a fungus identical with those of the whooping-cough fungus. Taking two of these specks from the skin of an orange, Dr. Tschamer introduced them by a strong inhalation into his lungs. The next day tickling of the throat began, which gradually increased, until, at the eighth day, a thoroughly developed whooping-cough set in. Should the discovery be confirmed, there is an additional reason to see that children abstain from eating apples with the skin on, and from chewing orange peel, which many are so fond of doing.

It is distinguished from croup, scarlet fever, diphtheria and a cold chiefly by the *whoop*. In whooping-cough the voice is unchanged, there is no fever, no false membrane, and no difficulty in breathing when not coughing.

TREATMENT.

A specific for whooping-cough is a strong tea made of chestnut leaves and sweetened to taste. From a tablespoonful to half a wine-glassful, should be taken three or four times a day. This is a remedy little known, but said to cure whooping-cough almost miraculously. We have used it some and have been pleased with the results. Our experience has been more extensive with the *Red Clover* plant and blossoms. It is cultivated in almost every part of the United States, and flowers throughout the summer. In efficacy it has no equal. Made into a strong tea and sweetened, it must be given as a drink at meals, and as a remedy between meals and on rising and retiring. Compare its effects upon your own with that of a neighbor's children, who are dosing with drugs and "cough mixtures." Yours will begin to mend in three or four days and be well a month or two

before the others. It cannot, of course, be used so freely with infants, but alternating with it a spray of carbolic acid, one drop to warm water an ounce, the cough yields readily.

ASTHMA.

This disease is so well known and differs so much from other affections that only a brief description is required. It occurs spasmodically and during the interval, the person is almost entirely free from any symptom that would indicate lung disease. Suddenly and without warning there is difficulty of breathing accompanied with a feeling and corresponding conduct as if suffocation was impending. The paroxysm occurs usually at night and no matter how spacious the room, or how inclement or cold the weather, the demand is for more air and is hardly satisfied if all windows and doors are thrown open. The countenance expresses great fear and anxiety and, despite the struggle for breath, the lungs expand but little. A loud wheezing sound continues while the spasm lasts. At its termination there is coughing and copious expectoration. An attack may continue for a few minutes, a few hours, or even last for days.

The condition producing a paroxysm is a spasmodic contraction of the bronchial tubes, thereby limiting the supply of air to the lungs.

The causes in a majority of cases can be traced to disease of some other organ or part of the body. Dyspepsia is the most frequent and, in the order named, follow disease of the kidneys, of the spinal cord, of the brain, of the heart, of the lungs, of the bladder, female complaints, irritating vapors such as the fumes of matches, of noxious gases, dust, sometimes humid atmosphere from an approaching storm, etc. The disease is seldom fatal.

It is distinguished from other diseases by its being paroxysmal and accompanied with wheezing. Other diseases of the air passages that might bear a resemblance come on slowly or are wanting the symptom of wheezing. Croup is attended with hoarseness, cough and with a fever; asthma is not.

TREATMENT.

When possible, a change of occupation is advisable. Some have recovered in a year or two without medication, by living almost entirely out-doors. In a few instances a change of climate is beneficial; the salt air on our seaboards acting as an irritant, the drier air of the praries ameliorating the attacks. Cases have recovered by following a course of Turkish baths, and by the use of electricity. The remedies generally used may relieve the spasm but do not permanently cure. The most common is by inhaling the smoke from burning stramonium. It can be prepared by pulverizing the leaves when dry by rubbing between the hands. Remove the stems. Stir in some pulverized nitrate of potash (saltpeter), and it is ready for use. If preferred in balls or cones it may be dampened with water, shaped and dried. Place a cone or about one-third of a teaspoonful of the powder upon a shovel, or piece of metal or crockery, fire it by a lighted paper and inhale the fumes. Leaning the body forward cover the head with a cloth that will hang down about a foot to confine the smoke. The coughing produced should not be avoided as it secures deeper inspirations. Drinking a cup of hot water may do as well. Once we considered a good remedy a syrup composed of

R.—Tincture of Bloodroot,	. . .	two drams,
Tincture of Lobelia,	. . .	four drams,
Simple Syrup, to make	, . .	four ounces. Mix.

Add essence of wintergreen to flavor, if desired. A teaspoonful was given every hour or two; if paroxysm severe, every five or ten minutes till nausea supervened.

Now we prefer to either of the above the following:

R.—Tincture of Iodine,	. . .	four drams,
Tincture of Camphor,	. . .	one ounce,
Oil of Tar,	. . .	one-half dram,
Carbolic acid solution,	. . .	twenty drops,
Chloroform or Sulphuric Ether,	. . .	two ounces.
		Mix.

Pour from fifteen to sixty drops upon the sponge of the Pocket Inhaler and inhale slowly but deeply. The relief is immediate and if used three or four times a day, of five minutes each, will, with proper internal remedies and due attention to diet, prove curative. Our favorite prescription is

R.—Iodide of Potash, ... three drams,
 Tincture of Belladonna, ... one dram,
 Chloroform or Sulphuric Ether, . . two drams,
 Simple Syrup, ... three ounces.

Mix.

Dose, a teaspoonful three or four times daily. After using this for a week, the first article may be increased in quantity. This does better with the dry asthma than the catarrhal kind, which may require medicated spray, as in catarrh. It will relieve the difficulty in breathing. Look for spinal irritation and if pressure upon the backbone induces cough, apply the liniment—

R.—Tincture of Arnica flowers,
 Tincture of Aconite root,
 Laudanum, ... in equal parts.

Mix.

Moisten flannel folded to two inches in width and six in length and lay upon the spine, fastening by a cord about the neck and one about the body if convenient. Some physicians use a flannel disk covered with rubber or oil-silk and wet with chloroform, which they apply to the spine, removing when the burning becomes unbearable. The same is applied to the breastbone to relieve difficult breathing.

Asthma is so intimately connected with other diseases or is so aggravated by them, that its cure is only possible when such derangements are removed. Dyspepsia stands first and consequently all indigestible foods should be avoided. Some articles of diet tend to cause asthmatic attacks, notably eggs. Suppers should be light and, if late, omitted altogether; breakfast should be served early and con-

stitute the principal meal. Bronchitis and heart diseases, of course, need special treatment.

HAY FEVER, HAY ASTHMA, SUMMER CATARRH, ROSE CATARRH.—
Catarrhus Æstivus.

It is doubtful whether hay has any influence in producing this catarrh. Some ascribe it to pollen of certain plants, some to pollen in general, while more recent investigators believe it to be brought about by microscopical parasites. Its appearance, repeated every Summer, may be the basis of its theoretical connection with vegetable growth. It suffices us to know that we can cure it. It manifests itself by violent and protracted sneezing, a free discharge of thin, irritating mucus from the eyes and nose, a sensation of suffocation, inflamed nose, snuffling, cough, headache and sometimes fever and prostration.

TREATMENT.

Thousands of dollars are spent annually by these sufferers in trips to the seaside or mountains to escape attack or abate one in progress. The change certainly affords relief but it is expensive. Some physicians prescribe a weak solution of tannin in water to be snuffed up the nostrils and toughen the membrane. If the paroxysm occurs they use a solution of the permanganate of potash with prompt but temporary benefit. Our favorite remedies are a solution (French) of *phenol* or the neutral solution of sulphate of quinia; the character of the discharge will determine which. These are used by the atomizer as recommended in catarrh. It not only immediately cures but seems to cure permanently, as in only a few instances have the attacks recurred in the seasons following.

I dotd buch object to a sdeese dow a'd thed,
It wakeda wud up, a'd it clears out the head—
But, whed wud is sdeesi'g frob borlig to dight,
It's rather bodotolous—ab I dot right?
I subtibes quite fadcy by head will cub off
Id wud of these sdeezes—they're worse thad a cough.

A cough tears your ludge, but a sdeeze tears you through—
A'd—gocddese—It's cubbl'g—a—tachoo!—A—tachoo!

That sdeeze was a bil'd wud—I thidk subthl'g wedt
Idside of by head—p'raps by brain-pad is redt,
That's dothi'g to what it cad do whed it tries!
It rips through by chest, a'd tears out by eyes,
By dose a'd by bouth, with a shiver'g crash,
That shatters by frabe wud horrible abash!
Ah! that is a sdeeze! Whed it cubs it's a crusher—
A'd—oh! it is cubbl'g—ar—r—ruschah!—Ar—r—r—rusch—ah!

—Punch.

PLEURISY.—*Pleuritis.*

Pleurisy is an inflammation of the lining membrane of the chest. This membrane not only covers the walls of this cavity, but is reflected backward over the lungs. Pleurisy results from colds and exposure, sudden checked respiration and other causes which constrict the skin and congest internal parts. In some instances the disease is confined to that part covering the internal walls of the thorax, but being so closely connected with the lungs, these organs seldom escape the effects of the spreading inflammation; and hence most cases are observed to be complicated, if only to a slight degree. The principal sign of the presence of pleurisy, is a sharp cutting pain just within the ribs, not always constant, but occurring always upon taking a long breath or coughing and sometimes upon attempting to speak. With this pain is generally febrile symptoms (but slight in comparison with pneumonia) feeble but hurried respiration and usually a short, dry, hacking cough. Should a part of one or both lungs become affected, the expectoration may change from a frothy to a mucous character, and even the sputa be streaked with blood. When both pleura and lungs are involved, we have to a greater or less extent the combined symptoms of pleurisy and pneumonia. This is what is termed *pleuro-pneumonia*.

As the pleuritic inflammation continues, one or both of two things may happen. Either those portions which touch and slip upon each other in health adhere, or dropsy (serous effusion) may supervene.

In the first instance, upon applying the ear to the chest a friction sound will be noticed. In the second, the side becomes enlarged, the spaces between the ribs less distinct, and from the density of the fluid, respiration in the lung may be lost to the listening ear. A simple method of discovering the presence of serum is to have the patient sit up and to percuss the affected side. This is done by laying the middle finger of one hand across the ribs at the lower part of the chest and with the end of the middle finger of the other, strike a blow as if hammering. The resultant sound will be *dull* and contrast greatly with percussion upon the other side or upon the upper part of the chest. It is implied in the above description that the inflammation is confined to one side, which is more frequently the case. The patient prefers to lie upon the affected side.

It is distinguished from pneumonia by its having its characteristic sharp pain, its dry cough, the swollen side, and the evidence furnished by auscultation and percussion. In pneumonia the pain is dull and deep-seated, the fever greater, the pulse more rapid and expectoration more profuse. It might be confounded with neuralgic rheumatism (pleurodynia) of the chest walls, if there is a sharp and severe pain and diminished respiratory action. This latter is entirely owing to involuntary restriction of the natural effort at respiration, but the pain wanders from one part to another, is not limited to one side, and we miss the fever, and friction and cough of pleurisy.

The indications are to reduce the fever and inflammatory action, to relieve the pain and to prevent effusion, or if it accumulates in a distressing or disturbing quantity, to remove it.

TREATMENT.

By the spirit-vapor bath and by the local application of the hot pack at the seat of the pain, together with the use of veratrum, the first two indications are met. The latter should be given to an adult as follows :

R.—Tincture Veratrum (green root) forty-eight to sixty drops,
 Essence of Wintergreen, . . . ten drops,
 Water, ... sixteen teaspoonfuls.

Mix

Give a teaspoonful every two hours until the pulse falls to eighty or seventy, and then less frequently, holding the pulse at this count for forty-eight hours. As soon as the attack is known to be pleurisy give

R.—Podophyllin, ... two grains,
 Cream of Tartar, ... half an ounce.

Mix thoroughly and make four powders. Give one in syrup every four hours until copious watery alvine discharges. This changes the locality of the irritation from the pleura to the bowels and also prevents serous effusion. The spirit bath is also beneficial in this particular. By the above treatment the accumulation of fluid in the chest seldom happens. If it does, it may be necessary to apply to the surgeon for relief, which is obtained by drawing off the water by the use of the aspirator, an instrument made for this particular purpose.

LUNG FEVER.—*Pneumonia*.

Pneumonia, or acute inflammation of the lung substance, is a serious disorder, though its fatality has been diminished by an improved practice. The disease is commonly ushered in by restlessness, with general febrile disturbance. At the end of one to three days there are rigors, soon followed by nausea, cough, pain in the side, distressed breathing, a pulse reaching to 140, or even 160 beats in the minute, burning heat of the skin, thirst, loss of appetite, prostration, headache, and sometimes transient delirium. Frequently no notice is taken of the primary restlessness, so that the patient describes the succession of his symptoms as shivering, fever, cough and breathlessness; and these four symptoms with pain, cover the disease.

Each case of pneumonia may be said to consist of four stages, viz.,

first, congestion of the pulmonary membrane with dryness; second, engorgement; third, hepatization; fourth, purulent infiltration.

In each stage there is fever, the temperature rising the first day to 101° , or even 102° , and gradually increasing until the fifth or sixth day, when it may be as high as 105° Fahrenheit. Next we have more or less pain in some portion of the chest, most severe at the commencement, together with accelerated and oppressed breathing. There is great depression with occasional delirium, and then we find a very distressing cough, with expectoration of viscid, rust-colored sputa, which unites in a mass so tenacious that even inversion of the vessel in which it lies will not detach any portion of it. The blood always contains an excess of fibrine, consequently there is danger that conghula may form in the right side of the heart or in the pulmonary arteries, giving rise to urgent dyspnoea, or even sudden death.

In the first stage, that of dryness of the pulmonary membranes, there is a dry harsh respiratory murmur. The skin is hot and dry, the pulse and respiration frequent, and there may be pain over the affected side. The duration of this stage does not exceed twenty-four hours. The second stage, or that of engorgement, is that in which the air-cells of the affected part of the lung become loaded with blood or bloody serum. If the chest be listened to when the lung is in this condition a sound will be heard closely resembling that of a lock of one's own hair rubbed between the finger and thumb close to the ear.

Where the inflammation proceeds, it passes into the third stage, or that of hepatization, in which the spongy character of the lung is quite lost, and the texture becomes hard and solid, resembling the cut surface of the liver; hence the name hepatized. The resonance on percussion is dull over the whole of the affected parts.

Advancing still further, we have the fourth stage of pneumonia, or that of purulent infiltration, which consists of diffused suppuration of the pulmonary tissue, parts of the lungs remaining dense and impermeable. There are no physical signs of this stage until parts

of the lungs break down and the pus is expectorated. If the inflammation subsides before the stage of purulent infiltration, as it fortunately often does, then the febrile disturbance decreases, the temperature drops toward its natural standard, the cough becomes less irritable, and the general distress mitigates. Still the frequency of the pulse and the hurried breathing continue until the lung begins to lose its solidity.

Pneumonia may affect one or both lungs, or, technically speaking, it may be double or single. The right lung suffers nearly twice as often as the left. The lower lobes are more subject to inflammation than the upper.

It is distinguished from dropsy of the lung, which is slow in its development and accompanies watery effusion in other parts of the body; and from pleurisy, which has sharp pain, cough *without* expectoration, frothy sputa not rust-colored, enlargement of the side and only slight feverish symptoms.

The indications are to reduce the inflammation, open the excretory organs, control the fever and prevent hepatization.

TREATMENT.

A cathartic of calcined magnesia is of advantage in unloading and cleansing the stomach and bowels, preparing them for the absorption of medicines. Draughts of warm lemonade taken an hour or two after will hasten its action and tend to relieve the lung by a metastasis of irritation to the bowel. Internally should be administered every two hours two or three drop doses of tincture of veratrum viride. A flannel jacket should be made to fit the chest, but loose enough to enclose when buttoned, four or more thicknesses of flannel extending from the neck to the navel, and reaching three-fourths of the distance around the body. This flannel envelope should be wrung out of hot water, and after sprinkling with a tablespoonful of the veratrum, be applied snugly and smoothly over and around the whole chest as far as possible.

When it is convenient a large linseed meal poultice into which has been thoroughly mixed the veratrum may be applied to the chest and

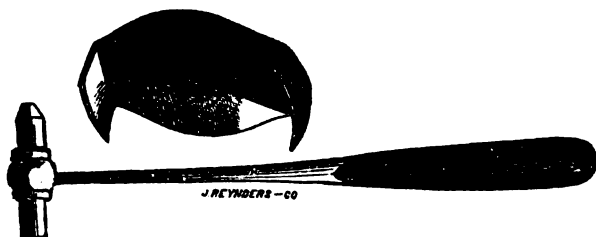
secured by the jacket or bandage. These should be changed as frequently as they become cool. If perspiration does not occur, the rubber bag, filled with hot water, may be applied to the feet. In the very young it may be better to substitute aconite for veratrum. Water or lemonade may be used as a drink and milk may be given for food. The temperature of the room should be kept at seventy degrees and the air slightly moistened by steam.

CONSUMPTION. Phthisis Pulmonalis.

Strictly speaking, the term consumption is applicable to most chronic diseases, for few terminate or exist for any length of time without the *wasting away* of the body or some of its parts. The emaciation in phthisis pulmonalis, or wasting away of the lungs, is so apparent and unfortunately so common that consumption has come to signify lung disease in particular. The middle-aged are most often attacked. Those of consumptive parents or with parents temperamentally inadapted or with scrofulous or phthisical family history are most liable. The temperate zone produces a greater number of cases than the torrid or frigid zones. Its duration is from six months to three years, depending upon its severity, the vitality of the patient, his occupation, his habits and hygienic surroundings. Cases occur in which a fatal termination is not delayed to a half year. This is termed, from its rapidity, *galloping* or *hasty* consumption. This type is confined to the young, to those who have been greatly debilitated by exhaustive diseases, including secret vices and sexual excesses, and the finely but feebly organized, who have been largely medicated with such minerals as mercury, antimony and the like. Consumption invariably preys upon the scrofulous, but there is a variety called *scrofulous consumption*. Here there is a change in the seat of the disease, from the swollen glands or from the surface in eruptive fevers, to the lungs, which, with greater or less rapidity, ulcerate and decay. Specific diseases like cancer, syphilis, etc., are prolific and powerful causes.

The symptoms of pulmonary consumption are manifold: A cough slight at first and occurring on rising in the morning, afterward

hacking, constant and worse at night; dry or with expectoration of frothy mucus, afterward viscid and opaque and mixed with small round particles of tubercular matter or streaked with blood; occasional spitting of blood or hemorrhage from the lungs; hectic fever, circumscribed redness on the cheeks during the fever and pale at other times; increased lustre of the eye and clearness of intellect; tongue white and, at a later period, red. The chest fails in its full expansion and flattens on the affected side; pains in the chest resembling those of rheumatic origin. Shortness of breath, increased by exertion, languor, weakness and loss of flesh, chilliness followed by flushes of heat, burning in hands and soles of feet, blue fingers with rounded nails, red lines around gums, headache, sore throat, catarrh, derangements of the stomach, quick and feeble pulse, diarrhœa, night-sweats and suppressed menses are symptoms that are present in most cases at some period. The most constant are the cough, hemorrhage, hectic and debility. There are signs even more positive than these and which determine the malady beyond question. As the upper lung (the part more commonly involved) becomes filled with tubercles, percussion returns a dull sound to the experienced ear, showing consolidation. Later softening takes place and cavities



INSTRUMENTS FOR PERCUSSION.

are formed, when a gurgling sound, like air passing through water, is heard. Other results of auscultation and percussion might be mentioned if space would permit.

We pass at once to the consideration of tubercle. What is it, and how is it formed?



STETHOSCOPE, used for auscultation, or "looking in to one's chest with your ears."

Insufficient food, want of pure dry air, of warmth and of light, long continued mental depression, aggravated and long continued disease of the digestive organs, deficient excretion, the injurious influences of fevers and other serious diseases, excessive loss of blood or of the more animalized secretions and other causes which deteriorate vitality, each and all depreciate the red corpuscles of the blood, the true vital element of that fluid. Fibrine is an element of the blood from which the areolar and connective tissues are formed and this depends upon the red corpuscles for its perfect development. An excess of fibrine and deficiency of red corpuscles are the chief features of a scrofulous and tuberculous or consumptive constitution. The deposit of tubercle is the deposit of fibrine; the two differing, not in kind, but in degree of vitality and capacity of organization. This low state of organizability does not belong to the whole mass of the fibrine of the blood, else tubercles would be developed in the tissues everywhere, but to a small or large portion, according to the ratio between the red globules and the fibrine. It escapes from the blood in the ordinary processes of nutrition of the tissues and owes its

origin to the degraded condition of the nutritive material. The change is retrograding instead of progressive. Where there is a great abundance of this fibrinous substance there is an increased tendency to deposit which is greatly promoted by all varieties of

congestion or inflammation and prevails most in organs which receive the largest supply of blood. This explains the peculiarly pernicious influence of inflammation of internal organs especially of the lungs, in scrofulous persons. There are several circumstances which contribute to render the lungs especially liable to tubercular deposit:

First. Their great vascularity or fulness of vessels and the great amount of blood that flows through them;

Second. Being the chief seat of the formation of fibrine;

Third. The softness and yielding nature of their textures which permits effusion to take place more readily than in denser textures;

Fourth. The exposure to external causes of disease, whether it be cold or irritating substances entering by the air-tubes or causes operating through the circulation. In hot climates tuberculous deposits occur in the liver and other abdominal viscera more frequently than in the lungs, and chronic liver disease and dysentery are the results in such persons as would in a colder climate fall victims to consumption. The lungs and bronchial glands are by far the most common seat of tubercles and even when found elsewhere, are commonly more abundant there and in a more advanced stage.

By this we mean softening. Rokitsansky thus describes it; "After the tubercle has existed for some time in a state of crudity, it becomes, as it were, loosened in its texture and usually increases in volume; it breaks up on slight pressure and becomes more moist; then changes into a yellowish dissolving, casein-like, fatty and viscid matter and finally breaks up into a thin whey-like acid fluid, in which flocks and shreds, the remains of the imperfectly disintegrated tubercle, are observed swimming. This is tubercular pus."

The pressure upon the walls of the cells and tubes may cause their ulceration and the pus penetrating the tubercular mass hastens the process of disintegration and rapidly forming abscesses may follow. Depositions of the firmer kind of tubercle may remain without giving any marked evidences of their presence, or at least, without creating much disturbance; but when they change and the disintegrating per-

ticles become liquified and thrown off in copious expectoration from the lungs, or in diarrhoea from the bowels, the patient experiences rapid changes, becomes exhausted, hectic, and soon dies. When the substance effused is the yellow form of tubercle, he is soon wasted away with rapid consumption, for this form is low in the grade of deposits and is associated with a weak resisting power of the constitution. The expectoration and diarrhoea are often accompanied with local inflammation, developed around the seat of deposit, and care should be taken in combatting the inflammation we do not weaken an already greatly enfeebled vitality of the system.

It is distinguished from chronic bronchitis chiefly by the absence of dullness upon percussion in the latter; from chronic pneumonia by the history of the acute attack of pneumonia and the dullness being confined to the *lower* lobe of one lung; from chronic pleurisy by the acute attack, the lower part only being involved, no spitting of blood and less active cough, emaciation and night sweats; from pulmonary abscess by the cavity being in the lower lobe only. The cough of a common cold is readily recognized, but should receive special attention from those of consumptive tendency. The difficult breathing of asthma can hardly be confounded with that of phthisis, beside the two diseases are seldom conjoined.

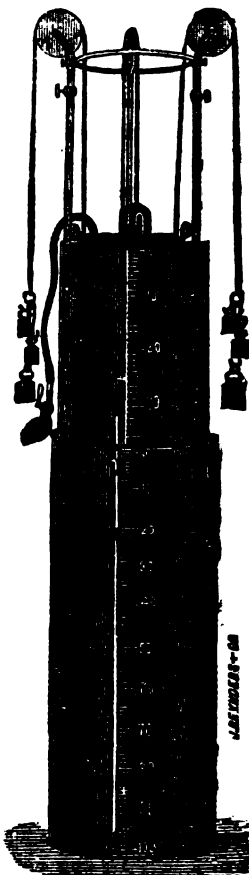
HÆMOPTYSIS, or hemorrhage from the lung, is an unpleasant event, but not so alarming as many believe. A matter of the greatest importance is the determination of the place from whence the blood proceeds. Investigate the gums to see if they are spongy, the throat for soreness and inflammation, the nasal cavity for catarrhal hemorrhage. The stomach may emit blood, but its appearance is preceded by a sense of weight and uneasiness, and the blood is always dark-colored, having been acted upon by the gastric juices. Pains in the chest indicate the presence of consumption, but are not of themselves conclusive evidence. They may be of rheumatic character, of neuralgic, or due to organic changes from recent pleurisy or pneumonia. Diarrhoea, swelling of the limbs and night sweats, may be traced to other causes and conditions than the one under considera-

tion. Occurring in consumption they are unfavorable symptoms, but not always beyond the realm of relief. The suppression of menstruation is significant, but may be effected by causes such as would operate if no pulmonary complaint existed. Child-bearing and nursing severely tax the physical system of most mothers, but since, in a few exceptional instances it has been inferred that these have prolonged life, pregnancy has been recommended to the consumptive as salutary. The majority are unable to bear the over-burden and speedily succumb. The results upon the ill-fated and doomed offspring are horrible to contemplate.

The indications are to introduce pure air abundantly into the lungs, strengthen these organs, and expand the chest, to enrich the blood, increase and vitalize the red corpuscles, stimulate the skin and excretory organs so as to secure the elimination of abnormal deposits and of effete and useless materials, and relieve all irritation, whether of the throat, chest, stomach or bowels.

TREATMENT.

The patient should under all circumstances take the air as much as possible, unless too feeble to exercise. In our day there is little excuse for being confined to the house on account of rainy weather. With water proofs, rubber boots, gloves and umbrella, the chances of getting wet are reduced to a minimum. The air is purer during and just subsequent to a



APPARATUS for employing compressed air.

shower. Uigh winds are to be avoided. Exercise should always be discontinued before fatigue. Expansion of the chest should be practiced by inhaling into the lungs as much air as possible, and closing the lips all but a small opening, pass it out slowly, that it may remain in contact with the blood longer than it otherwise would, for its more thorough decarbonization and higher oxygenation. An instrument has been invented by Dr. Ramadge of England—a small tube, funnel-shaped, at each end, one of which is larger than the other—for the purpose of assisting the patient in slow inspiration and expiration. It is said that the discovery of this method of cure was accidental and occurred in this way: a consumptive in one of the English hospitals was affected with a tumor in the neck which pressed upon the windpipe. As the tumor increased the pressure caused the gradual closing of the air passage until breathing could only be accomplished with the greatest difficulty. To the surprise of all it was noticed that simultaneously the chest was expanding, the lungs enlarging and healing. The faculty concluded to delay the removal of the tumor and await the result. In six months the lungs were pronounced healed and the troublesome blessing was removed.

My RESPIRATOR is admirably adapted to the purpose and enables any one to increase their breathing capacity to a very remarkable degree. It is beneficial to public speakers, readers and singers, to teachers and others; in fact, it has an extensive sphere of usefulness. It consists of a hard wood body and ivory ends. One end is a mouth-



RESPIRATOR.

piece and the other is trumpet-shaped. Within is an ivory valve so adjusted that inspiration is free or only slightly intercepted, while expiration is sufficiently hindered and retarded to effect the desired purpose. Thus the blood of the consumptive is rendered purer and

more highly vitalized and the pressure of the inspired air, slowly expired, forces open the air tubes which are being pressed together by the deposits, and crowding upon those deposits, causes their absorption; and, also, by pressing together the walls of any newly formed cavities such as come into existence in early consumption, causes their adhesion. This result is certainly very desirable, since abscesses and tubercular masses tend to encroach upon the healthier parts of the lung, if the lung cannot be made, or is not able, to act upon them. Oxygen is the great purifier, the great burner of these deposits. But why not use it pure, as it can readily be manufactured, and by rubber bags stored and carried about? Simply this: experience



SPIROMETER, used for measuring the capacity of the lungs.

proves that while it seems to benefit at first, eventually it produces acute inflammation of the lungs. The numerous oxygen inhalers, if they evolved oxygen, (which they do not), would be subject to this objection. In the air as we find it, oxygen is remedial, the chemically prepared is an overdose, is poisonous. The expansion of the chest by the Respirator, is soon noticeable and has, in some instances, increased in circumference four inches in the short space of two months. Larger chest means larger lungs, larger bellows to feed the flame of life.

This inspiration and expiration of air is accomplished by the whole chest, and mainly by the diaphragm and abdominal muscles. A two-fold purpose is accomplished, namely, that just mentioned, and a new impetus is given to

the process of digestion and all the excretory functions. The person soon begins to feel the increasing capacity of the chest; the shoulders no longer droop, the body is erect, and the load of disease is soon lightened. Five minutes' use, three times a day, is sufficient, and always with an empty stomach.

In scrofulous persons the skin is usually thin, delicate, and very impressible; and this is probably one reason why tubercular consumption is more frequent in cold, damp regions, where the climate is very changeable, as in the north temperate zone near the seacoast. The skin is often chilled and made pallid or shriveled, and, in consequence, the secretions are retained in the blood and thrown upon the lungs, causing bronchial and pneumonic inflammation. Medicines should be administered of an alterative character, having also diaphoretic properties; remedies that will purify the blood and at the same time promote perspiration, and cause the imperfectly formed material to seek an exit upon the cutaneous surface. For this there is nothing better or more valuable than the vegetable alteratives combined with the alterative and alkaline properties of the iodide of potassium. The compound suited to the majority is made of

R.—Fluid Extract of Queen's root,	four ounces,
Fluid Extract of Poke root,	two ounces,
Fluid Extract of Blue-flag,	two ounces,
Fluid Extract of Mandrake or Blood root,	one ounce,
Iodide of Potassium,	two ounces,
Simple Syrup,	twenty ounces.

Mix.

Take a teaspoonful two, three or four times a day. This may be continued for some time, or, if thought best, some other of the alteratives may be used for a time and then this may be renewed. It is a blood disease and must be acted upon through the blood.

The vital element of the blood, the red corpuscles, must be increased and their vitality exalted. At the same time agents should be introduced into the circulation that will dissolve these deposits, thus putting them into a condition in which they may be eliminated

from the system. To further this end the excretory organs should be made to work in as healthy a manner as possible and the skin kept clean and of proper temperature by an abundance of warm clothing. Alkalies and the fixed oils have a solvent tendency on such deposits. Such alkalies only should be given, which, while they would produce this effect when they came in contact with the deposits, would exert no injurious influence on other structures. If they can be so combined as to affect favorably the corpuscular element of the blood they are so much the more valuable. The hypophosphites of lime and soda, either alone or combined with iron, do this and phosphorus is a very important element of the red blood corpuscles. The fat may be supplied by such doses of the refined oil of the liver of the cod as can well be borne. But not the pure oil of the druggist, for this is to many specially nauseous and disgusting, but that only which is converted into an emulsion which may be known by its milky-white opaque appearance. To be palatable the oil of almonds should be added before emulsifying. This ingredient contains an acid (hydrocyanic) that controls cough which is sometimes a distressing symptom. This influence is increased by the addition of wild cherry, besides adding to the pleasant taste. We deem it both important and necessary. When prepared the general composition of each fluid ounce is

Cod Liver Oil,		fifty per cent.,
Glycerole of Wild Cherry,		fifty per cent.,
Calcium Hypophosphite,		six grains,
Sodium Hypophosphite,		three grains,
Ol. Amygdalium,		a trace.

It is a food as well as efficient remedy, supplying phosphorus and fat to the wasting tissues of the brain and nerve, maintaining animal heat by its alterative effects, changing morbid glandular action, rescuing the system from blood depravities, removing bronchial and pulmonary irritations and is the remedy *par excellence* in phthisis. It is equally effectual in bronchitis, scrofulous affections and all

forms of disease attended with emaciation. Fat is very minutely divisible; and in the preparation of material for nutrition of the system, fat becomes the basis of all cell growth. Besides, its extreme divisibility allows it to penetrate into the substance of these firm tubercular masses, loosening them up and making them susceptible to be acted upon by the surrounding healthy structures. Fat in the form of the phosphorated fat is also an important element of the red blood corpuscles. Pepsin may be used to facilitate digestion. It is only necessary to mention the valuable assistance rendered by sunlight, open windows day and night, exercise, proper food and sufficient clothing.

Pains in the chest and about the ribs (intercostal muscles), caused by a day of excessive coughing, can be overcome during the night by applying to the chest at bed-time, over the seat of pain, a double thickness of flannel wrung out of warm water, or by anointing the chest with the antiseptic ointment.

The cough may be modified by an occasional taste of salt or by eating lumps of white sugar, allowing them to dissolve in the mouth before swallowing. If it lasts for several days, as it may in case of a cold, then recourse should be had to expectorants and we prefer and recommend

R. —Tincture of Lobelia,	.	.	.	two drams,
Tincture of Blood root,	.	.	.	one dram,
Tincture of Tolu,	.	.	.	two drams,
Essence of Wintergreen,	.	.	.	thirty drops,
Simple Syrup, sufficient to make	.	.	.	four ounces in all.
				Mix.

Take a teaspoonful every two or three hours until relieved. The vitality must not be reduced by antimonial compounds.

The moderate use of whisky affords a pure stimulant and in certain persons accelerates the vital force and is a valuable adjunct to other remedies. Those having troublesome catarrh and who find difficulty in dislodging hardened and tenaceous mucus in the

throat upon rising may loosen the same with a teaspoonful in a little water. This prevents the distressing nausea.

When the disease is catarrhal in nature, associated with irritation of the air passage, with hoarseness, sore throat, etc., the atomizing instrument should be employed the same as recommended in treating catarrh. In this case however the spray is directed toward the back of the mouth and downward into the larynx. During the operation the nostrils should be closed, and breathing be confined to the passage of air through the mouth. The spray condenses to some extent on the walls of the larynx and trachea, but so intimately is it mixed with the air and so easily influenced by the current, that it follows it to the smallest air-cell of the lungs. Post-mortem after the use of colored liquids or that well charged with iron has demonstrated the truth of this statement. The deeper the inspiration and the longer continued, the more will find these smaller tubuli and the greater the medication. So mild is this method that never has a single instance of injury been observed. Of course, to a considerable extent, this will depend upon the agent employed. In very many cases the results of this treatment have been wonderful. In the short space of two or three months the cough has disappeared, together with pains in the chest, soreness of the throat, bronchial irritation and night sweats; the chest has expanded, the strength and flesh began to return. It must not be understood that these effects followed the use of the spray alone, for such was not the case. The means employed were four, viz: the spray, the respirator, the emulsion and a tonic. These can be easily managed by any invalid and is more like amusement and pastime than exertion and trouble. Regularity and perseverance are however specially necessary.

In nervous irritability and sleeplessness five to ten grains of the bromide of soda may be taken in a little water at bed time or a pill of

R.—Lupulin,		two grains,
Gelsemin,		one-quarter grain.
		Mix.

Occasionally consumptives are met who complain much of vomiting, losing their meals from a few minutes to an hour after eating. This may and often does lessen the proper supply of nourishment. Not a single exception has come to our notice in which the following has failed, it is specific:

R.—Carbolic Acid,		forty drops,
Tincture of Wintergreen,		one dram,
Simple Syrup,		four ounces.

Mix.

Take a teaspoonful an hour before each meal.

Night sweats are exceedingly exhaustive, and indicate debility of the nervous system. The remedy to be preferred above all others is the medicinal principle of the balmony, known as chelonin. Administer at the same time phosphorus and nux vomica in pill or solution.

The accident calling for the most prompt relief is hæmoptysis, or hemorrhage. It varies in character; may be sudden and profuse or scanty, of short or long duration, and may repeat in a few days, or not in months. Each has its significance respecting the condition of the lungs, the violence of the disease, and the probability of hasty or tardy recovery. Whenever it occurs, the patient should immediately seek the recumbent position. If profuse, a remedy always at hand is common table salt. Put a teaspoonful in two of water, and swallow at once. If the bleeding is slight, it may be checked by

R.—Tincture of Fleabane,
Tincture of Cinnamon.

Mix in equal parts, and give five to ten drops in sweetened water every hour while necessary. One dose is usually sufficient. An excellent remedy is gallic acid, ten to twenty grains in water, one ounce, used by the atomizer in the form of spray. In absence of all remedies, a cup of hot water or hot tea may be drank, a pint of hot water used as an injection into the bowels, mustard paste applied to the soles of the feet, and hot packs put upon the ankles. If deemed

necessary, girdles of elastic may be put around the upper thigh sufficiently tight to swell the veins below the ligature. This plan equalizes the circulation, and, upon emergency, confines much of the blood at a part remote from the bleeding vessels.

Favorable conditions of climate will evidently facilitate recovery in the early stage, that which is equally mild and dry being preferable, so as to allow free cutaneous action and prevent bronchial irritation. To expect benefit from this quarter at any time but the outset, is folly. Add to the fatigue of travel the grief of separation from friends, the continual coughing, hawking and spitting heard and seen at the fashionable health resorts, and which make "the heart sick," and the entire absence of the tender care and sympathy of loving friends, and the facilities and comforts of one's own fireside, and the picture is complete. In fact, "there's no place like home." The air, if pure, is chemically the same all over the world. Now, if we can artificially keep the air pure, dry, and of even temperature within doors when not exercising, and by suitable clothing maintain an even temperature of the body, we meet all the requirements and all that the most famous resort can furnish. In patients of delicate organizations, with evident taint of scrofula, or where there is a suspicion of consumptive tendency, prompt attention should be given to the early and faintest indications of the beginning of the disease, and a course of treatment, hygienic and medical, adopted, which may and will, in a very large proportion of cases, change the inclination to disease and save life. If this is not done, and the disease is allowed to progress until firmly seated, the most persistent and loving care, and the most skillful medical attention, may not be able to cut short its ravages until the life is sacrificed.

Smoking greatly aggravates consumption, develops it when the germs exist in the system, and causes indigestion, out of which consumption often originates. As a rule, patients should abandon tobacco, and the observance of it is in every case very beneficial. The troublesome cough of bronchitis often disappears when smoking is suspended or discontinued.

Dr. Paul Niemeyer, in writing upon this subject, presents many plain and practical points. We use his language : " The apices are a veritable receptacle for mucus, which, if not removed, dries up, grows hard, and causes ulceration. In one hundred autopsies we find as many as ninety cases where the apices are more or less shrunk, scarred and obstructed, and this without reference to the cause of death.

The apices, furthermore, are regular dust and gas traps, especially the right apex, which usually is the first to be affected by consump-



Anti-dust Respirator, to be used in Mills, Mines and Factories as a preventive of lead-poisoning, salivation and consumption. Invaluable to farmers while threshing.

tion, because the air-passage leading to it is wider and less crooked than that leading to the left apex. All impurities inhaled into the lungs, and especially all dust, first make their way to the apices and there settle, unless they are kept in motion by bodily exercise. Elimination, too, is more difficult in the apices than in the inferior lobes. In coughing, the latter are aided by the abdominal pressure, while the apices, on the contrary, have to depend on their own contractility, which is weaker in proportion as they have been out of exercise, or as their cell-walls have grown together.

In addition to these causes heavy clothing, which, like the yoke for carrying water, bears on the collar-bone, diminishes the power of respiration in the apices; a modern winter overcoat weighs as much as eight or nine pounds. Hence the troublesome dry cough, which often ends in vomiting, yet does not loosen the mucus in the lungs.

That pulmonary consumption is only an acquired disease we know from the fact that it first appears in the apices of the lungs—a portion of the organ which is not affected by hereditary pathological processes. The diathesis only is hereditary, and this diathesis cou-

sists simply of a general debility, which, however, can be overcome. But the thing that is transmitted hereditarily is *habits of life*."

It requires considerable effort on the part of a physician to convince a patient of the importance of the fact that great will power is as necessary as medicine. Without it the prognosis or forecast is unfavorable. This class of invalids is hopeful and credulous, and, in some respects, it is well that it is so. Hope buries many a past suffering and clouds in darkness the slow and stealthy steps of this destroyer. Credulity can be used to advantage by an experienced and conscientious physician, but is, with equal facility, diverted by the quacks and impostors who trade in human life and induce the invalid to swallow "mixtures" with impossible healing powers, some of which stimulate, others narcotize and all almost invariably harm.

When ambition is aroused and good resolutions formed, the consumptive is on the road to recovery. How far progress will be made in the journey depends on the amount of perseverance. Not spasmodic perseverance, but persistent and continued. If he wills not to die, he can often live in spite of disease; and, if he has little or no attachment to life, he will slip away as easily as a child will fall asleep. Men live by their minds as well as their bodies. Their bodies have no life of themselves; they are only receptacles of life; tenements for their minds; and the will has much to do in continuing the physical occupancy or giving it up. The disease is working incessantly and the afflicted must do likewise. The condition may be thus mathematically stated. If by hygienic and medical means at the end of a day you have progressed a certain distance and the disease has progressed as far, you are no better and no worse; if the disease has progressed farther, you are certainly worse; this is self-evident. But if you have made more progress than the disease, you have an advantage,—securing which, keep it. What we want to impress upon the reader is this: that one factor is unceasingly in operation, and the other must be as continually active.

OTHER DISEASES OF THE LUNGS.

There are other diseases of the lungs, some of them amenable to treatment and some not. We can only give them brief mention and this is done to show that consumption is not the only dangerous ailment of the lungs and that some of these are more emphatically incurable.

WIND DROPSY.—*Emphysema*. Here the lung is inflated, the air-cells being enlarged and distended. Such a condition sometimes follows asthma or results from a trade compelling much exposure to the weather. From appearances the person would be considered as having large lungs, the chest is so prominent and bulging. A closer inspection finds the breath short and breathing difficult, taxing the strength almost to its limit. The inspiration is quick and feeble and the expiration (breathing out) slow, noisy and laborious. Sometimes the liver or heart is displaced. Symptoms of heart disease are not uncommon.

WIND IN THE CHEST.—*Pneumothorax*. From injury and other causes wind sometimes enters the cavity of the pleura, in other words, gets between the lungs and chest-walls. The prominence is present, but only on one side: rapping the affected side gives a drum-head sound, breathing is more difficult and lying down almost impossible.

ABSCESS OF THE LUNG.—*Pneumotostema*. Abscess may follow pneumonia but it is seldom suspected until it opens or is discovered, unless the lungs are previously examined by an expert physician. The constitutional symptoms are those of abscesses; chills, fever, hectic, etc. When the abscess opens it discharges into the chest, or more commonly into the air-tubes and the purulent matter reaches the mouth. In the scrofulous, purulent matter, offensive and bloody, may discharge, but in such a case it is more likely to be *gangrene of the lung* (necropneumonia), a decay of its substance.

COLLAPSE OF THE LUNG.—*Atelectasis*. In severe bronchitis and whooping-cough the air-cells have been known to collapse; a fatal condition but fortunately rarely occurring.

PULMONARY APOPLEXY is another of these terrible lung affections. The flow of blood may be so great as to overwhelm the lung, prevent respiration and destroy life. The majority of cases of sudden death that are attributed to "heart disease" are cases of apoplexy of the lungs.

SHORT BREATH, DIFFICULT BREATHING.—*Dyspnœa.*

Dyspnœa is a symptom of many diseases but specially diagnostic of none. It is an accompaniment of diseases of the heart, lungs, pleura, diaphragm, brain and spinal cord: appears also in obstructions of the air passages and in fatness and conditions of the abdomen in which the diaphragm or midriff is crowded upward, such as tumors, pregnancy, etc. There are few lung or chest diseases without difficult breathing; in asthma it constitutes the chief feature of the disease. In angina of the heart it is second to the severe pain. In pulmonary and pleuritic affections the inflammation may be followed by effusion of water, blood or pus, into the pleural cavities and this presents a barrier to the expansion of the lungs. Diseases of the nervous system, attended with palpitation, congest the lungs and render respiration difficult. Rapid breathing, however, is not always difficult breathing. Fright, startling news, shocking sights and other causes producing great excitement, either mental or physical, engender labored breathing. Paralysis of the diaphragm is a serious source of *dyspnœa*. It occurs in the debilitated after the slightest exercise. Travelers upon mountain tops experience it from breathing the rarified air. The attack then resembles sea-sickness together with great pain and throbbing in the head. No general line of treatment can be given, but each case must be considered separately.

FOREIGN SUBSTANCES IN THE TRACHEA (*Air-passage.*)

Children are likely to suddenly draw beads, beans, coins, or other playthings into the air passage. Although the distress may be great and the paroxysms of coughing violent, yet they may remain for

weeks, and even for months, without doing any greater harm than the coughing. By some peculiarity of position or while lying down, an extraordinary fit of coughing expels them. The danger from an operation by opening a passage into the windpipe just above the breastbone, is so great that it should not be attempted unless something beside the coughing seems to threaten life. The trachea has been opened and yet the operation proved unsuccessful because of the severe paroxysms caused by an attempt to introduce instruments into the tube.

TREATMENT.

Hold a child by the legs or ankles, head downward. This will be likely to provoke a paroxysm and the substance will be ejected. If unsuccessful in the first attempt, after sufficient rest, repeat the operation. No harm can come from repeated trials. The adult is seldom troubled in this way. If such an accident should happen, place the hips upon a bed with the hands upon the floor and cough. A bystander may assist by applying vigorous blows upon the back just below the shoulder-blade.

SUSPENDED ANIMATION, SUFFOCATION.—*Asphyxia*.

The medical term, *asphyxia*, signifies without pulse, pulseless. This does not fully express the condition, for about the first thing noticed by the observer is that the breathing is imperfectly performed or stopped entirely. Insensible breathing or absence of respiration physicians call *apnoea*. Of course, if the circulation and respiration are absolutely at rest, the person is dead. But as this may be only *apparent* and not *real*, we are morally bound to make every effort in our power to revive the individual. It is astonishing how long a person may be asphyxiated and yet recover consciousness; providing always that proper means are employed and *continued* without intermission, it may be for a half hour, an hour, or even *two hours*. A gasp from the almost lifeless body will send a thrill of delight

through your frame that you will never forget and will amply repay you for all your labors.

Suspended animation results from some obstruction to the access of air to the lungs, as a bolus of food lodged in the throat and closing the air passages, by constriction about the neck, as in strangling, or by the inhalation of poisonous gases; the effect in all cases being that the blue blood in the lungs is not converted into the red and life-sustaining arterial fluid. At this moment we think of but one exception and that is in the new-born, when there is a want of nervous stimulus.

It occurs by drowning, smothering, strangling and hanging. The object in legal hanging is to dislocate the bones of the neck, and, by pressure upon the spinal cord, extinguish life; but in the bungling manner in which it is usually done, it is little else than strangling. The poisonous gases are prolific causes of asphyxia. The heavy carbonic acid gas settles in old wells, mines and brewers' vats. A person lowered into this is suddenly struck insensible. If not immediately rescued, death ensues. Another should be sent to the rescue at once. Care should be exercised that the second party is not submerged in the gas for a longer time than a person can ordinarily hold his breath, or he, too, may be stricken. If unsuccessful in securing the victim, better return to the surface for breath and try again. Fresh dry charcoal is a powerful absorbent of this gas. The well may be freed by lowering a basket of charcoal into the gas for ten or fifteen minutes. This should then be withdrawn and a fresh supply substituted, or the first lot heated and again used. When a lighted candle can be let down to the bottom without extinguishing the flame, no gas is present. It is best in all cases to try this simple test before making the descent. Suffocation not unfrequently follows the escape of the common burning gas into unventilated sleeping apartments. People in our northern latitudes in winter are poisoned, and sometimes asphyxiated by closing the drafts of cast iron stoves too closely at night. Economy of fuel is laudable, but in this matter there are other and more weighty considerations. The fumes

from burning charcoal are still more potent. Life is oftener lost in burning buildings from the asphyxia produced by the smoke than by the flames themselves. Our firemen frequently rescue from bedrooms or dormitories yet untouched by the fire, both children and adults in an insensible condition, caused by this agent.

TREATMENT.

No matter what the cause, the first indications are to restore respiration and circulation of blood. The latter is accomplished by friction of the surface, and the former, which is of most importance, by a method termed "artificial respiration," which we will presently consider. When breathing is fairly established, stimulants may be administered—brandy, whisky, carbonate of ammonia, or

R.—Chloroform, ... one dram,
Comp. Spirits of Lavender, ... one ounce.

Mix.

In small doses, repeated at short intervals. Rest and a full supply of fresh air are not to be overlooked.

ARTIFICIAL RESPIRATION.

TO RESTORE PERSONS APPARENTLY DEAD.

The "direct method," as it is called by Dr. Benjamin Howard, U. S. A., its originator, is superior to that of Marshall Hall or Dr. Sylvester. We quote from the *Lancet*, which gives a report of his lecture to a college class, altering the language to suit the new audience. The directions apply particularly to the resuscitation of the drowning, but can, without difficulty, be varied to suit asphyxia from other causes:

Instantly rip away his wet clothing to the waist, and of it make a large, firm, solid bolster.

Quickly turning the face downward, place the bolster beneath the belly, making that the highest point, the mouth the lowest. Place both hands upon the back, immediately above the bolster, and throw your

whole weight forcibly forward, compressing the stomach and lower part of the chest between your hands and the bolster for a few seconds, two or three times, with very short intervals.

Thorough drainage being combined with thorough compression, the lungs, if they require it, are relieved of water, and the stomach, if distended, of its surplus contents, forcible ejection making the process pretty complete. Should this effort happen to have been superfluous, no time has been lost, an efficient means of artificial respiration having by this process been already commenced.

Quickly turn the patient on his back, the bolster beneath it making again the belly and front margins of the ribs the highest point of the body, the shoulders and head resting on the ground.

Seize the patient's wrists, and having secured the utmost possible extension with them cross behind his head and pin to the ground with your left hand.

With the right thumb and forefinger covered with the corner of a dry pocket handkerchief, withdraw the tip of the tongue, holding it out of the extreme right corner of the mouth. This is the easiest, least barbarous, and firmest way of holding the tongue. If an assistant be at hand, both wrists and tongue may be confided to his care.

In this position two-thirds of the entrance to the mouth is quite free and the tongue is immovably fixed forward. The valve to the upper part of the windpipe is, by this backward curvature of the neck, precluded from pressure and partial closure from the undue flexion of the neck so frequently occurring. The head, as Nelaton urged, is thoroughly dependent. The free ends of the ribs are as prominent as they can be made and there is a degree of chest expansion, not obtainable, I believe, in any other manner. The belly, being the highest point, the abdominal contents, instead of embarrassing the movements of the diaphragm, (the muscle separating the chest and its contents from the abdomen and its contents) tend to gravitate away from it.

To produce respiration, kneel astride the patient's hip, rest the ball of each thumb upon the lower part of the breast bone, the fingers falling

naturally upon the ribs on either side. Resting your elbows against your sides and using your knees as a pivot, *throw the whole weight of your body slowly and steadily forward* until your mouth nearly touches the mouth of the patient and while you might slowly count *one-two-three*; then suddenly, *by a final push, spring yourself back to your first erect position on your knees.* Remain there while you might slowly count *one-two*; then repeat; and so on about eight or ten times a minute.

This method is called the "direct method," because, by it, the few things needed to be done, are, simply done. The tongue needs holding forward—it is held; the ribs pressing—they are pressed. It is so simple that any one, after a single lesson, can do it as well as the always distant physician. It is not fatiguing; the force employed is the weight of the operator, who remains in an easy position with alternations of complete rest. It can be practiced by any body, anywhere; in a bath, in bed or boat, and such adjunctive measures as friction, etc., can be used simultaneously.

ORDER VIII. BOWEL DISEASES.

INFLAMMATION OF THE STOMACH.—*Gastritis.*

The stomach is the most abused organ of the body and the most patient and uncomplaining. When we consider the variety of foods, stimulants and condiments, the different kinds of cookery, the frequency and irregularity in meals, the hard work imposed by over-eating, and the fact that it is the centre of so many nerves, we are surprised that irritation and inflammation are not more frequent.

With gastritis, there is intense thirst and constant burning pain, pain upon pressure, nausea, retching and vomiting of food, then mucus, then bile and sometimes blood. The disease causes vomiting and vomiting may cause the disease. If not soon relieved, there is great prostration and depression of the nerves of organic life. It attends poisoning, sea-sickness, pregnancy, colic, blows, habitual use of alcoholic beverages, etc.

TREATMENT.

In this particular your patience may be tried, for sometimes the stomach "has a fancy of its own." Try counter-irritation by a mustard-paste over the stomach, left on just long enough to give redness, repeatedly applied. It may be necessary to give morphine in one eighth-grain doses every two hours until the stomach quiets. Two to four grains of opium made into a pill, oiled, and passed into the rectum, may be substituted. Sometimes the antacid cordial will relieve promptly, viz:

R.—Fluid Extract of Rhubarb,	. . .	one dram,
Essence of Spearmint,	. . .	thirty drops,
Bicarbonate of Soda,	. . .	one dram,
Brandy,		two drams,
Simple Syrup,		four ounces.

Mix.

Take a teaspoonful every half hour; or

R.—Tincture of Valerian,	. . .	one ounce,
Calcined Magnesla,	. . .	two drams,
Tincture of Opium,	. . .	one or two drams,
Peppermint water,	. . .	three ounces,
Essence of Anise,	. . .	twenty drops.

Mix.

Shake well and take in teaspoonful doses. This recipe is of especial advantage to chronic cases. It subdues inflammation, gives sleep, and it does not constipate the bowels, destroy the appetite, and make you feel sick in the morning like morphine. But we have seen cases in which ice seemed to be the only thing that would lay upon the stomach, even a teaspoonful of water being refused. The ice is broken into small lumps and taken in nearly a solid form. In gastric irritation in fevers give ice-cream. For sea-sickness give a mild sedative like

R.—Chloroform,		one dram,
Comp. Spirits of Lavender,	. . .	one ounce.

Mix.

Take a teaspoonful every half hour if necessary. The other conditions mentioned are considered separately in other places under their appropriate headings.

Gastritis, in the chronic form, is a species of dyspepsia, requiring bitter tonics, such as the strychnia compounds.

INDIGESTION, DYSPEPSIA.

There are many varieties of this disease and it cannot be cured unless treatment is adapted to the particular kind.

One class is caused by a chronic inflammation of the lining of the stomach. There is some pain or uneasiness after meals, tenderness on pressure, tendency to vomit, especially if rich or indigestible food has been eaten, a sense of thirst after meals, heart-burn, sometimes dry tongue, gas in stomach and bowels. After the meal is fully digested the patient feels better. The tongue is smooth, red and glossy, or is white, with red edges. If the inflammation extends to the bowels there is tendency to diarrhoea. Bowels usually constipated.

TREATMENT.

The diet should be plain and all irritating and indigestible articles of food avoided. Better use whole wheat, cracked wheat, oatmeal, rice and fruits of all kinds, providing they are not too acid, which is objectionable. Temperance and regularity should characterize the patient in every particular, respecting meals, exercise, sleep, etc.

If acidity of the stomach and constipation are present, use the calcined magnesia. The kind of dyspepsia under consideration is accompanied with *water-brash* or the profuse flow of saliva. Some have advised smoking tobacco as a relief; but patients smoke thirty years and still the water-brash is present. Is there another remedy (so called) in which they would persist so faithfully and not despair?

Another form of dyspepsia is that in which a relaxed condition of the mucous membrane of the stomach exists. There is an abundant secretion of vitiated gastric juice. Acidity is the prominent symptom and fermentation of the food takes place both in the stomach and bowels. Both are distended with gases and diarrhoea may be frequent. The treatment should be stimulating. A good remedy is the cold effusion of composition (Beach's). Pepsin is valuable.

Pepsin should be given in most forms of dyspepsia, as it aids and hastens stomach digestion and thereby gives the other remedies used a better chance to operate. Care and regularity in diet, habits, etc., are necessary to complete the cure.

A common form of dyspepsia is connected with a deranged and torpid condition of the liver and inactive bowels. The tongue is yellowish or whitish, the urine high colored and scanty. As the liver fails to perform its function properly, the kidneys have a depurative action thrown upon them, which belongs to the liver. There is pain in the right side and under the shoulder blade; a bad taste in the mouth in the morning and a sense of weight and fullness about the liver and stomach, especially after eating. The countenance is pale, yellow and anxious. There is a gnawing sensation in the stomach and frequently a morbid craving appetite. The food does not nourish; the patient loses flesh, has dizzy spells and broods over his sickness.

TREATMENT.

The diet must be light, cathartics used to regulate the bowels, pepsin to aid digestion and tonics to brace up the system. If in a malarious district, anti-periodics must be employed. Tobacco must be given up and all organic or functional disorders removed. Catarrhal dyspepsia must be treated with astringents.

There are many disorders of the stomach which receive the name of dyspepsia, but which are due to nervous sympathy with distant organs. These may be traced to brain and kidney disorders in the male and the kidney and womb diseases in the female. The proper treatment of the organ at fault will remove all disturbance at the stomach. To attempt to give a treatment for every variety of dyspepsia in a book of this nature would occupy too much space. A volume might be written on this subject alone. The case, in all its particulars, should be presented to a competent physician.

Pyrosis is a name given to a symptom of dyspepsia. It consists of

a sensation of heat and burning in the stomach and the raising of sour and acrid fluid, which scalds as it rises. The patient complains of sour stomach. The heat and pain are popularly described by the term *heart-burn* (*Cardialgia*) or water-brash when the saliva of the mouth flows freely. The sulphite of soda in five grain doses before each meal or small (less than half teaspoonful) doses of calcined magnesia will relieve.

GONENESS. This is a common term used to express a peculiar sensation located about the pit of the stomach or just beneath the breast bone, because of its resemblance to fainting, hunger or empty stomach. In all cases it indicates a lack of tone in the nervous system or what is the same thing, a deficiency of nervous force, accompanied with dyspepsia.

ULCER OF THE STOMACH.—*Gastric Ulcer.*

The symptoms of this ulcer are the same as those of chronic inflammation of the stomach or "dyspepsia." Food causes pain and a hearty meal distresses and provokes vomiting. The aliment taken is imperfectly digested, the face is pale and anxious, and there is a burning spot at the pit of the stomach that does not move and which hurts upon pressure. Gastric ulcer may last for years, or destroy life in a few weeks by perforation of the stomach or by opening blood-vessels and causing fatal hemorrhage.

TREATMENT.

The food should be starchy, and when albuminous articles such as meat, milk, etc., are used, they should be first treated to pepsin and partially digested artificially, before swallowing. Our reliance for medication is placed chiefly upon golden-seal in decoction and powder; an opium pill at night, if necessary.

CANCER OF THE STOMACH.—*Gastric Cancer.*

Gastric ulcer is rare, but cancer of the stomach is more common,

and, we are sorry to add, more fatal. Both are seated near the outlet of the stomach. Cancer begins as gastritis, develops as ulcer, but in time there is the hard tumor in the upper abdomen, which can be felt through its walls. The shooting pains, the hemorrhage, prolonged constipation, the offensive odor of the breath and vomited matter, and the pale-yellowish cast of countenance, will further confirm any doubts or suspicions of the presence of this fatal complaint, whose existence is limited to a twelve-month.

HEMORRHAGE OF THE STOMACH.—See Consumption, page 463.

HICCOUGH.—*Singultus*.

Every one is familiar with this affection, which occurs after a hearty meal, particularly when fluids have been taken in great quantity and the person attempts to walk fast or otherwise exercise immediately after such a meal. Wind and acidity may provoke it. In infants, hiccough follows jolting or rough handling when recently nursed. Repeated attacks are likely to happen the same day from the least provocation. A child may be made to laugh until it hiccoughs. It occurs in fevers, strangulated hernia, and other grave diseases, and is in some a symptom of approaching dissolution.

TREATMENT.

When arising from simple causes, it usually terminates of its own accord. It is only when obstinate that relief is called for. Perfect quiet for a few moments may be all that is necessary. An unexpected slap on the back or other surprise may stop it. Holding the breath as long as possible and then breathing very slowly, is a common practice. Lemon juice is beneficial. If persistent, boil a teaspoonful of flour of mustard in half a pint of water for ten minutes, filter and take at one draught.

INFLAMMATION OF THE LIVER.—*Hepatitis*.

This disease is more common in hot climates, but is occasionally met in northern latitudes as a result of injury, blows, etc. It is recognized by weight and pain to the right of the pit of the stomach. The part is tender and pain increases upon pressure. Pain under the right shoulder-blade is complained of and the subject cannot lay on the left side. The liver is congested and enlarged, the tongue is coated, there is a bitter taste in the mouth, with nausea and vomiting perhaps. The skin is sallow and yellowish, jaundiced. The urine is also colored and stains the linen yellow. The excrement is wanting in color, is clay or lead-like. Some of these symptoms, such as headache, nausea or vomiting and sallow complexion, are popularly known as *biliousness*, and many times the bile has nothing to do with it. Some people, and doctors among them, always see a "liver out of order," and consequently the poor bowels are punished with cathartics, often harsh, irritating and drastic. We would not mention it only that in too many cases the requirements are of a sustaining, rather than a depleting, treatment. In hepatitis we sometimes have a high fever. When the inflammation involves one of the principal veins (portal), the jaundice is intense and the dejections completely discolored. The results of inflammation of the liver are numerous; abscesses, tubercles, calculi or stones, etc. In hot climates, abscess is most common. The symptoms of abscess are the same as abscess in any other place, chill, fever, etc. It may "point" and discharge in any direction.

TREATMENT.

In the majority of instances the condition at the outset is one of congestion simply. If the bowels are constipated or have been inactive, give for two or three evenings a teaspoonful of calcined magnesia in sweetened water or milk. Only in an aggravated case would we give repeated doses of leptandrin or of the

R.—Podophyllin, ... two grains,
 Cream of Tartar, ... two drams. Mix.

When this is necessary, it may be divided into four powders, and one given in syrup nightly. The spirit vapor bath is necessary and almost invaluable. The internal remedies are

R.—Tinct. of Veratrum Viride, . . . fifty drops,
 Essence of Wintergreen, . . . one dram,
 Water, ... two ounces. Mix.

Take a teaspoonful every two or four hours according to the fever.
 Also

R.—Tincture of Nux Vomica, . . . twenty drops,
 Water, ... two ounces. Mix.

Take a teaspoonful every hour or two hours after a dose of the above recipe.

Upon recovery from the violence of the acute attack and as long as the sallowness continues, or the residence, occupation and diet remain the same, the only safeguard against its repetition or some form of intermittent, lies in the occasional use of a pill made of

R.—Podophyllin, ... six grains,
 Leptandrin, ... twelve grains,
 Iridin, ... two grains,
 Extract of Teraxicum, q. s., to make twenty-four pills.

JAUNDICE, JANDERS, YELLOWS.—*Icterus*.

The prominent feature of jaundice is the yellow color of the skin and eyes. This color is not exact in shade in different individuals, frequently comes close to black or green. The patient is depressed, low spirited, the excrement is deficient in bile or in color, and the urine is high-colored, yellowish. The bile which should pass along the intestines may be held back and thus forced into the blood, or it

may, on account of the condition of the bowels, be reabsorbed. It is evident, therefore, that icterus is not so much a disease as a symptom of disease.

TREATMENT.

If the cause can be discovered treat accordingly. The custom among nurses of treating infants with saffron tea is certainly worthy of imitation. In the adult an emetic of lobelia will sometimes break up an acute jaundice at once, or the condition upon which it depends. A course of treatment generally applicable will be the pill just given above, and the spirit vapor bath.

ACUTE OR YELLOW ATROPHY OF THE LIVER.

We may have jaundice, followed quickly by the vomiting and purging of blood, severe headache, delirium, and, from the blood-poisoning by biliary matters, coma and death. This is the history of the disease under consideration. It runs its course rapidly, and as it is generally fatal, it may be well to note its differentiation.

It is distinguished from inflammation of the liver by the jaundice being more marked, by the hemorrhage and coma; there are chemical tests also. The disease belongs to those whose constitution is debilitated by intemperance, venery or malaria.

HOBNAILED, NUTMEG, GIN OR GRANULAR LIVER.

Cirrhosis Hepatis.

This pathological condition is called hobnailed on account of the lumps upon the surface of the liver, which can be felt through the skin; gin-liver because more common with the intemperate; nutmeg and granular from its feeling and appearance upon dissection. In this disease there is atrophy or diminution in size, but the biliary ducts are dilated. It begins as hepatitis, but develops abdominal dropsy. The dropsy may be the only symptom present, and may mislead, or its presence may prevent an accurate examination of the liver. There is great loss of flesh and strength, vomiting and purging blood, and finally coma from blood-poisoning. It results from

intemperance, and its amelioration must begin in a reform of such habits; then the management of the dropsy and the use of bitters and tonics.

OTHER DISEASES OF THE LIVER.

In the scrofulous, syphilitic, debilitated and intemperate we occasionally meet with an enlargement of this organ. In *fatty degeneration of the liver* the surface is smooth, and there is dropsy. In *waxy liver* the increase in size is greater and the organ is harder; dropsy does not always follow. It occurs in the syphilitic most often. In *cancer of the liver* the symptoms are the same as those of chronic inflammation of the liver, with, perhaps, the exception of less jaundice. The enlargement is greater and more rapid than in either of the above, the dropsy is less or wanting, the spleen is normal in size, and the pain is greater. There is a rapid loss of flesh and strength, and the party wears the worried and anxious look of those afflicted with cancer.

STONE, GRAVEL, GALL-STONES—*Calculus*.

Stones are formed from the deposit of impurities, very minute at first, but which increase in size by successive layers upon their surface. It is similar to the massive balls of snow formed by school-boys, but differs in one respect, instead of the ball going to the snow, the snow seeks the nucleus. They are chemical formations, and may arise from an excess of acid, of alkali, of ammonia, etc. They are minute, may be single or multiple, and sometimes in the bladder reach the extensive proportions of a goose egg. They are found in the kidneys, in the bladder, in the urethra, in the gall-bladder, and in the intestines.

Calculi (renal), or stones in the kidneys, are difficult to detect, and in most instances soon leave their place of formation and pass along the ureters, to be deposited in the bladder. The symptoms are pain in the small of the back in the region of the kidneys, with hæmaturia or bloody urine; and if they do not progress, purulent matter and destruction of tissue. They are usually first discovered in their

progress downward. The pain comes suddenly, is very severe, and as suddenly departs. It begins with the entrance of the stone into the ureter, and ends with its exit from the tube. With this is pain along the groin and down into the testicles, which are spasmodically drawn upward. The treatment consists in thoroughly relaxing the whole system so as to promote relaxation of the tubes through which the calculus passes. Patients should be put to bed, and teaspoonful doses of gelsemium given every twenty or thirty minutes until it is impossible to raise the eye-lids. The passage is then speedy and unaccompanied with spasm; besides, if others are forming, they will be loosened and carried toward the bladder. Morphine in one-quarter grain doses may be administered every two hours to relieve pain, or the physician may use chloroform by inhalation.

Stone in the bladder, particularly if it reaches any size, is usually single. In females the shorter and larger urethra facilitates their expulsion when small. From the weight upon the neck of the bladder we have irritation of this part. The result is, the frequent desire to pass water; and while it is passing the stone covers the mouth of the discharging pipe, and the urine is retained. The flow is sometimes speedily renewed by changing the position of the body. This irritation may continue for years, and may be the sole cause of complaint, except, perhaps, the sensation of weight or dragging downward. The physician has a simple test by which he can remove all doubt as to the presence of stone in the bladder. A catheter (solid) is passed along the urethra into the bladder, and is so manipulated that if a stone is present the ear easily detects the metallic sound caused by their striking together.

TREATMENT.

Efforts to dissolve a stone by chemicals have been uniformly unsuccessful. An instrument has in latter years been manufactured which will crush the calculus between its jaws. Experience has proved that is not as valuable as it would be supposed. There is great difficulty in pulverizing the mass, and the removal of the pieces greatly injures the urethra, by cutting and tearing. Surgery must

be called into service, and if properly employed but little injury need be done and the number of successful operations reach a higher percentage than is currently reported.

Stones in the the urethra are smaller particles which have been forced from the bladder by the urine. They should be returned by warm water injections and the calibre of the tube increased by dilatation. In this and the conditions above noticed the use of remedies to increase the quantity of urine should be carefully avoided, particularly turpentine, copaiba and similar irritants.

GALL-STONES. As the name implies, these form in the gall-bladder and passing along a short tube empty into the intestine. Here the pain is in the upper abdomen near the liver and stomach. It also begins and suddenly terminates; the pain is severe and may be mistaken for colic. There is this difference: in gall-stones the pain is always at one point and is much relieved by pressure. The countenance is yellowish, and there is nausea or vomiting, and the presence of gall-stones in the evacuations from the bowels. With the exception of the latter symptom, the disorder closely resembles neuralgia of the liver and bilious colic. Until it is definitely known that there are gall-stones the treatment should be the same as in bilious colic. When it is fully determined, the second attack should be treated with the administration of teaspoonful doses of gelseminum every twenty minutes until the system is fully relaxed and until the eyelids are only raised with difficulty. One-eighth or one-quarter grain doses of morphine may be given to relieve pain.

SPLENTIS.

Inflammation of the spleen is not frequently met as a circumscribed disease. When it does occur, it is detected chiefly by the soreness and pain upon pressure on the left side under the false or short ribs and above and to the front of the kidneys. There is a sense of weight, uneasiness upon lying upon that side and feverishness; nausea and vomiting sometimes. It is a disease of the hot

climates and will yield to cathartics bringing away copious watery discharges. We prefer

R.—Podophyllin, ... two grains,
 Cream of Tartar, ... two drams.

Mix.

Divide into four powders and give one in syrup every two hours until operation.

The enlargement of the spleen is very common, occurring in fever and ague, typhoid and all malarial fevers, and in leucocythæmia. It is sometimes distended to great size by these agues. When the enlargement becomes permanent it is termed "ague cake." Then we have disturbances in the abdominal organs such as would result from the presence of a tumor. The stomach is irritable and may throw off food, the liver and bowels inactive, face sallow and tongue coated, and we may have *abscess of the spleen*.

TREATMENT.

In malarious districts there is scarcely a person who is subject to chills and fever, who has not an enlarged spleen. Occurring during the fever it yields to remedies that remove or cure the fever. This is less effectually done with each recurrence of the intermittent. Hence after an acute attack it is best to use for some time after, pills made of

R.—Podophyllin, ... six grains,
 Leptandrin, ... twelve grains,
 Iridin, ... two grains,
 Extract of Dandelion, ... sufficient quantity.

Mix, and make twenty-four pills. Take one each night and morning. We have in another place also recommended this pill to prevent an attack or recurrence of ague. In case of enlargement of long standing, this will not avail; generally quinine has been used and used to excess, and other remedies must be employed. A regular course of medicine is necessary and the more nearly it is adapted to the condition of the individual, the better.

INFLAMMATION OF THE BOWELS.—*Enteritis*.

The intestines are lined with a mucous membrane and covered with a serous coat called peritoneum. An inflammation of the mucous coat gives rise to such conditions as discussed under the titles of diarrhoea and dysentery. To the peritoneal inflammation we will shortly give attention. Enteritis proper is an inflammation involving both surfaces and the intermediate tissues. Medical men limit the term to the small intestines, that of the larger being classed as rectitis, colitis, etc. The symptoms of enteritis are acute and constant pain in the abdomen usually about the naval, aggravated at intervals, tenderness upon pressure, chill sometimes, high fever and great thirst. There is loss of appetite, nausea and vomiting perhaps. The passages from the bowels vary; may be mucoid, offensive or bloody, or constipation may be present. The most alarming cases are those which result from obstructions in the bowels, when labored breathing, bloating of the abdomen, hiccough, exhaustion and death may follow.

It is distinguished from colic by the tenderness of the abdomen and the increased pain on pressure, both absent in colic. A colic long continued may result in enteritis. From typhoid fever by the brain symptoms. From peritonitis by its local pain and tenderness, more diffused in peritonitis and by the nausea.

TREATMENT.

If the cause is unknown, a careful examination must be made for hernia or other obstructions. If any one of these are found, it should be treated as advised under that heading (see Obstructions in the Bowels.) In general, it will be better to begin treatment by a mild cathartic; we prefer two doses of calcined magnesia, a teaspoonful each in a little milk, three hours apart. This relieves the intestines of all irritating contents. For the pain give

R.—Tincture of Nux Vomica, . . . twenty drops,
Water, ... a cupful.

Mix.

Dose, a teaspoonful every two hours. For the fever and inflammation:

R.—Tincture of Veratrum Viride, . . . one dram,
Essence of Wintergreen, . . . one dram,
Water, ... a cupful.

Mix.

Give a teaspoonful one hour after each dose of the above. A few thicknesses of flannel wrung out of hot water and sprinkled with spirits of camphor may be, if its weight can be borne, placed over the abdomen. If it cannot, a spirit vapor bath is advisable, by the rubber bag laid between the knees. If necessary, an opium pill may be administered at bed time.

PERITONITIS.

This is more dangerous and more frequently fatal than enteritis, which it closely resembles. The prominent symptoms are extensive and severe pain in the abdomen and tenderness, the former increased by the slightest motion or pressure, and its distention by gas, and afterward also by fluids. There are throbbing headache, great thirst, nausea and vomiting sometimes, high fever, with wiry rapid pulse, dry skin, and a short respiration, limited to prevent disturbance of the bowels, and hence increase of pain. The course is rapid, and in a few days the distention of the abdomen has reached its extreme limits, and dissolution succeeds delirium and coma. Peritonitis not unfrequently follows upon delivery and abortion, but may originate in injuries or exposure, or the effects of other diseases, as in the perforation of the bowels in typhoid fever, or of the stomach in ulcer, etc. In these latter cases collapse is precipitate and inevitable.

It is distinguished from puerperal fever by the latter occurring subsequent to childbirth, the cessation of the uterine flow; puerperal fever includes peritonitis. It is more extensive than enteritis, and the bloating is greater; enteritis is partially a peritonitis. The dif-

ference between the two is not always well marked, and the treatment is about the same. In colic there is no fever or tenderness, and the pain is not constant.

TREATMENT.

We begin with an examination for obstructions of the bowels, and if discovered or strongly suspected, we treat accordingly (see Obstructions of the Bowels.) In case of recent labor, we treat as puerperal fever. If it is a clear case of peritonitis, the treatment must be active. A teaspoonful of calcined magnesia is given in sweetened water or milk every three hours until free watery evacuations. Only in the first stage do cathartics seem admissible; but such a mild and unirritating one as we have indicated may be repeated subsequently, sufficiently often, to keep the bowels moving regularly, or nearly so. To control the inflammation, we rely chiefly upon the veratrum and vapor sweat. Rubber bags or bottles are filled with hot water, and, being covered with flannel and wetted with alcohol, are placed at the sides by the hips. Veratrum viride is given in doses regulated in size and frequency by the pulse. Three-drop doses in a little water might be given every hour at first; when the pulse falls to eighty, give every two hours. If it continues over a hundred, increase to five drops, and continue until the pulse begins to fall or nausea supervenes, when it falls rapidly. If the pulse can be held at eighty for twenty-four hours, all danger has passed.

COLIC, BELLY-ACHE.

This is not so much a disease as a symptom of some derangement of the stomach or bowels with pain. The treatment is therefore confined to the relief of the pain. The pains are sharp and occasional, may be in any part of the bowels, but mostly around the navel. There may be nausea, vomiting, bloating from wind, some tenderness, cramping of the muscles into hard knots or cold sweats; more than one of these symptoms being present in every attack. *Infantile colic* or *gripping* is produced by wind, indigestion or improper and indigestible food. *Flatulent or wind-colic* in adults is of the same nature, the

wind sometimes accumulating so as to greatly disturb the abdomen and is accompanied with a rumbling noise. *Bilious colic* depends upon the presence of bile in large quantities. It regurgitates into the stomach, causing heat and a burning sensation and vomiting of a yellow or greenish matter. *Painter's colic* is confined to this and other crafts and arises from the absorption into the system of the lead used in painting, gilding, etc., or the same metal handled where mined or manufactured, (see below). *Iliac passion* or *ilius* is a species of colic due to obstructions in the bowels. Vomiting is always present and the constipation is obstinate (see Obstructions in the Bowels). The presence of worms in children may lead to colic, also freight or excessive emotion in those of delicate habit.

It is distinguished from some diseases without difficulty; from others not as readily from the fact stated at the commencement of this article. Infantile colic is fortunately caused, in the majority of cases, by wind. Flatulent colic is accompanied with the passage of wind by the mouth and rectum. In the pain of dysmenorrhœa there is the menstrual flow. In inflammation of the bowels there is the fever and pain on pressure, though colic may result in inflammation. In neuralgia vomiting and knotting are absent. The passage of stone from the kidney creates pain in the loins, and the testicle is drawn up. The difference between bilious colic and the passage of gall-stones is so slight as to annoy the physician. Their presence in the dejections is the only certainty of the latter.

TREATMENT.

The infantile colic may be met by a tea of spearmint, or chamomile, a half-ounce to a pint of boiling water, or by the tincture of either, ten drops to a half-tumbler of water. Dose, a half-teaspoonful every one or two hours. Ten or fifteen grains of calcined magnesia may be given in water. The interval between each nursing should be lengthened.

In flatulent colic in adults give teaspoonful doses every half-hour, until pain is mitigated, of

R.—Fluid extract of Rhubarb,	. . .	one dram,
Brandy, ...	. . .	two drams,
Essence Spearmint, ...	. . .	thirty drops,
Bicarbonate of Soda, ...	. . .	one dram,
Simple Syrup, ...	. . .	four ounces.

Mix.

Apply hot packs to the abdomen. Hot water injections act kindly.

Bilious colic may be treated in a similar way. The medicine should be repeated in case it is lost by vomiting. The cholera tincture is better. The prescription is

R.—Tincture of Opium,		
Tincture of Camphor,		
Tincture of Capsicum,	. . . of each,	one ounce,
Chloroform, ...	. . .	three drams,
Alcohol, to make	. . .	five ounces in all.

Mix.

Dose, a teaspoonful every hour in a little water, or

R.—Chloroform, ...	. . .	one dram,
Comp. Spirits of Lavender, ...	. . .	one ounce.

Mix.

Give a teaspoonful every fifteen minutes in a little water. When vomiting is obstinate, it may be relieved by copious injections of hot water by the rectum, and the application of the mustard paste over the stomach. To get the full effects of the mustard, mix with *cold* water. In most colics there is pain about the naval. When this is present the disease may be cured by giving alone,

R.—Tincture of Nux Vomica, ...	. . .	thirty drops,
Water, ...	. . .	four ounces.

Mix.

Dose, a teaspoonful every half-hour. For a child, double the quantity of water.

In protracted and obstinate colic chloroform should be administered. Pour a half or whole teaspoonful upon the centre of a folded

napkin and place an inch or two from the nose so that plenty of air may be inhaled with the vapor. In *usus*, treatment should only follow a careful examination of the abdomen. Hernial or other obstructions may be present. The reader is referred to the pages upon obstructions in the essay on constipation. If none of these maladies exist, the case may be treated as one of colic and impaction. Administer the chloroform and lavender compound as mentioned above, and in addition,

R.—Calcined Magnesia, ... one teaspoonful,
Milk or Sweetened water, ... one ounce.

Mix.

Repeat every hour until free evacuations take place.

LEAD OR PAINTER'S COLIC.—*Colica Pictonum*.

As above remarked, this disease follows the introduction of lead into the system. This takes place by absorption through the skin or by inhalation of fine dust. It prevails among painters, glaziers, plumbers, printers, type-founders, white-lead manufacturers and lead miners. It comes on gradually and presents all of the symptoms of lead-poisoning. There is a bluish line around the margin of the gums, the wrists frequently and suddenly give out or drop from partial paralysis, the appetite is poor and digestion imperfect. The bowels are also partly paralyzed by the lead and constipation is common. The evacuations resemble those of sheep and are light-colored. There is general emaciation and paralysis of the lower limbs is a common sequel. The colic comes on with darting pains which increase in severity. The attack resembles bilious colic. It is more protracted and may last two or three days, unless cured.

TREATMENT.

The remedies employed during the colic are about the same as prescribed for bilious colic. We prefer the chloroform and lavender compound, a teaspoonful in water every hour or half hour; a half hour after each dose a teaspoonful of the nux vomica and water

recipe; hot packs, or, better still, hot baths of the whole person, or the spirit vapor bath. When the stomach quiets, give the calcined magnesia and water, a teaspoonful of each every two hours, till the bowels move.

Returning to the same trade is likely to provoke another attack. Prevention is, therefore, necessary. This is accomplished by keeping the system free from lead. The anti-dust respirator should be worn to intercept the metal in inhalation. A paper cap will keep it from the hair of the head. Careful and thorough washing, using a nail-brush for the fingers, prevents its introduction while eating. Change the clothes when working hours are over. The sulphur bath will take it from the skin, and the internal use of sulphite of soda in three or five grain doses three times a day, will tend to eliminate any traces in the body. We are informed that the free use of milk will prevent lead poisoning, but we have not been able to verify the statement. It may be good, is simple and easily tried.

SUMMER COMPLAINT.—*Cholera Infantum.*

This is the most fatal disease among children in cities during the summer, and it is not to be wondered at when we consider the food, the air, the filth; such food, such stench, such surroundings. Among the well-to-do the babe is nursed too frequently and irregularly, or the whole care is thrown upon the nurse-girl, who takes little heed of the condition of its bottle and less of the character of its contents. Besides, we believe the majority of infants are too warmly clothed; for fear they will take cold, they are almost baked. In comparison with other animals, the human family show in its young a dreadful mortality.

Infantile cholera accompanies dentition. The diarrhoea first appears and may be slight or profuse. The discharges are thin and light-colored or greenish, seldom yellowish. They soon increase in frequency and become frothy and offensive. The stomach is irritable, with nausea and vomiting. Soon follows constant vomiting

and purging, with great loss of flesh and strength. Fever and thirst are great, pulse rapid, skin dry, head and abdomen hot, extremities cold. The face becomes thin and pale, the eyes sunken, the child restless, dull and drowsy, or delirious. With dark offensive evacuations, cold surface, bloated bowels and insensibility, the fatal termination approaches.

The indications are to change the acrid character of the evacuations, quiet the stomach, stop the fever, restore normal circulation, subdue irritations, and supply nourishment.

TREATMENT.

A decoction made from

R. —Peppermint,		one dram,
Rhubarb, pulverized,		two drams,
Bicarbonate of Potash or Soda,		four drams,
Hot water,		one-half pint,
And when cool,		
Brandy,		one ounce.

Mix.

Should be administered in teaspoonful doses every ten, twenty, or thirty minutes until the bowels move with a golden or yellowish stool; then three times a day. If the vomiting is persistent and this cannot be held upon the stomach, apply a mint poultice over the stomach, or a paste of ground ginger, removing it when the surface becomes reddened, reapplying when the color fades. If the child can swallow them, give small bits of ice, or administer teaspoonful doses every half hour of the following:

R. —Tincture of Nux Vomica,		twenty drops,
Water,		four ounces.

Mix.

If the discharges are of a light color, give ten drops of the fluid extract of leptandria, in a teaspoonful of simple syrup, every two hours, until they become of a dark-green color, then proceed as above.

The remedy for the disease and its fever is ipecac. Take

R.—Tincture of Ipecac, . . . twenty to thirty drops,
 Water, ... four ounces, (a cupful.)
 Mix.

Give a teaspoonful every one, two or three hours, according to the urgency of the symptoms. It may be given every two hours, alternating with any other remedy needed.

Some physicians advise the use of cold water for drink, given in small quantities, often repeated. We prefer *hot water*, in every cupful of which has been dissolved two drams of pure gum arabic. If not weaned, give the breast exclusively, and have the mother follow simple diet. If using the nursing bottle, give the fresh milk of a healthy cow, to which is added lime-water, one dram to a cupful. If you cannot be sure about the cow, use *fresh* condensed milk, one part to warm water thirty parts. That put up in cans is sufficiently sweetened.

If the head or abdomen is hot apply cold packs; if the feet are cold use the hot water bag. Pure air and a uniform temperature are desirable. If you cannot get pure air any other way, go to the country—it may be the child's salvation.

No opium, in any form, we beg of you. Remember our words—*after opium, the coffin.*

If the gums are reddened, hot and swollen, lance them as elsewhere described.

CHOLERA MORBUS.

This is a disease of hot climates or of temperate climates during hot weather. Carelessness in drinking or eating may bring on an attack at any season. This disorder may be placed between colic and cholera. There are darting pains through the bowels and sometimes cramps, or a slight diarrhoea may be the only premonitory symptom. Bile in considerable quantities flows into the intestine and stomach, when nausea, vomiting and purging follow. In severe cases these symptoms may develop simultaneously. The surface is

generally cool, the pulse weak, and the thirst excessive. Gripping is intermittent but severe, the limbs draw up, the abdomen recedes and the subject shrieks or groans with pain. As in all painful affections of the bowels, there is much prostration of strength.

It is distinguished from colic by the purging; in colic the bowels are usually constipated; from inflammation of the stomach by the feverishness, and from cholera as described below.

TREATMENT.

What the patient asks for and wants above all things else is relief from pain. Sometimes this may be most easily effected by an emetic, made of tincture of lobelia, one dram, and warm water one ounce. But we are wise in our generation and do not want emetics. A simple and effective remedy is hot water. Drink of it frequently, inject into the bowels and apply hot packs to the abdomen. The hot packs may be sprinkled with spirits of camphor and should be frequently renewed. The anti-spasmodic compound meets the indication.

℞.—Chloroform,		one dram,
Comp. Spirits of Lavender,		one ounce.
		Mix.

Give a teaspoonful every fifteen minutes, or oftener if required. We prefer the cholera tincture when it is at hand. As this meets promptly most of the summer complaints, the diarrhoeas, colics and cholerias, a vial of it should be found in every household. It is composed of

℞—Tincture of Opium,	
Tincture of Camphor,	
Tincture of Capsicum, of each,	one ounce,
Chloroform,	three drams,
Alcohol, enough to make five ounces in all.	
	Mix.

Give from twenty to sixty drops clear, or in a little water.

HERNIA.

There are several kinds of hernia, named from their location or the part of the body involved. They occur usually in persons of weak constitutions, but not always, as many of the more robust are afflicted with rupture. Sometimes there is a local weakness which is not known to exist until the accident occurs. *Ventral* rupture is simply the protrusion of a portion of the intestines or other part of the abdominal contents through the abdominal walls. It occurs more frequently in men while over-straining and lifting, and in women while in labor. The most common form is *inguinal*. The intestine passes in the line and in the canal of the spermatic cord. A lump is discovered near the pubic bone, which disappears upon lying upon the back and drawing up the knee. Sometimes some little manipulation may be necessary in order to return it. Without proper appliances, in the shape of a comfortable and well-fitting truss,* the rupture is likely to become more extensive and aggravated, and there is danger of strangulation. *Strangulation* is simply a condition in which it is impossible from constrictions above to return the encased knuckle [for treatment of inguinal strangulation see *Hernial Obstructions*]. When the protrusion passes down so far as to reach the scrotum it is termed *scrotal* hernia. This is dangerous in the extreme and is the most frequent kind of irreducible hernia. *Umbilical hernia* is a protrusion or rupture through the naval and occurs principally in infants and is caused by crying. The treatment is simple. Having returned the contents of the hernia, a piece of adhesive plaster two inches wide and six inches long is fastened to the abdomen, in this manner; one-half is stuck to the skin on a line directly across the body, with the centre of the plaster immediately over the navel. The hernia having been returned and the surface skin folded inward and held between the finger and thumb of one hand, the plaster is drawn tightly and the other end fastened. The plaster is now smooth from end to end and also the skin underneath, except

* See MEDICAL APPLIANCES.

at the centre, where there is a fullness of skin but no protrusion. Over this centre a pad may be placed. The safety-pad made of several thicknesses of fine linen, to protect the skin from being injured by pins may be extended downward to cover the plaster if preferred. A band around the body is required to secure the pad in its position. If the cord has not yet separated it may be necessary to remove the adhesive strips daily, otherwise it may remain for weeks.

Femoral Hernia occurs more frequently in the female, but is occasionally met with in the male. It does not take the slanting course in the groin, as in the inguinal form, and passes more directly downward upon the front and inner aspect of the thigh. It is small and roundish, like a marble or nut. A truss is required to retain the part in its proper place.

PURGING, LOOSENESS OF THE BOWELS.—*Diarrhœa.*

This is a disease of the intestines where the evacuations are too frequent, too liquid and too copious. It comes from nervous shock as to soldiers in battle, sea captains in storms, from sympathetic irritation as in teething, irritation of the brain, from aphthous mouth by spreading to the stomach and bowels, from colds, improper food or drink, morbid biliary secretions, from want of tone, from irritation, ulceration, etc.

TREATMENT.

For the management in cases of teething, see Dentition; in aphthous mouth see Aphthæ; in typhoid fever, see remarks under that heading. For a child take a teaspoonful of equal parts of pulverized rhubarb, bi-carbonate of soda and peppermint plant, mixed together and add a teacupful of boiling water; when cool, sweeten and give in teaspoonful doses, or

R.—Fluid Extract of Rhubarb,	. . .	one dram,
Brandy,	. . .	two drams,
Essence of Spearmint,	. . .	thirty drops,
Bi-carbonate of Soda,	. . .	one dram,
Water or Simple Syrup,	. . .	four ounces. Mix.

Give a teaspoonful in the morning every hour until the bowels move a bright yellow, then stop. After this give every hour during the day a teaspoonful of the tea of red raspberry leaves. Keep the child quiet. Walking with it and moving about keeps up the irritation in the bowels ; also

R.—Kino,		two grains,
Pulverized Opium,		one grain,
Leptandrin,		two grains,
Pulverized Licorice,		one grain.

Mix.

For a child two or three years of age make six powders and give one at time of rest in brown sugar and a little water, repeating if the discharges recur during the night. If the child sleeps do not disturb it. The next morning give a single dose of the rhubarb compound and follow with the raspberry tea during the day and a powder at night.

Many of the diarrhœas of children are from indigestible food. When this is known to be the case three to five grain doses of pepsin three times a day will assist digestion and stop the evacuations. Fermentation may be suspected when the bowels bloat with wind, when gas is raised from the stomach and the vomiting and excrement are acid. In such a case

R.—A Solution of Gum Arabic,		one ounce,
Carbolic Acid,		one to three grains.

Mix.

Give a teaspoonful every hour or two.

For the adult use the rhubarb compound in teaspoonful doses every two hours. If possible keep quiet in bed, with a pillow under the hips. This puts the burden of breathing entirely upon the chest and leaves the abdominal contents undisturbed. At night use the kino in this way:

R.—Leptandrin and Kino, each		four grains,
Pulverized Opium and Licorice, each		two grains.

Mix.

Make four pills. Take one at bed time, repeating if the bowels

move during the night. As the diarrhoea abates the pills may be continued at night and the rhubarb mixture given at longer intervals.

In that form of diarrhoea attended with frequent and watery discharges a simple and effective remedy is

R.—Podophyllin, ...	one grain,
Hydrastin, ...	fifteen grains,
Sugar of Milk or Sugar, ...	thirty grains.

Mix.

After thorough mixing divide into thirty powders and take one every one or two hours.

In the summer diarrhoeas attended with griping, colic or cholera morbus, take

R.—Tincture of Opium,	
Tincture of Camphor,	
Tincture of Capsicum, of each, ...	one ounce,
Chloroform, ...	three drams,.
Alcohol, sufficient to make	five ounces in all.

Mix.

Two or three doses will usually effect a cure.

DYSENTERY, FLUX, BLOODY FLUX.—*Rectitis, Colitis.*

Dysentery differs from diarrhoea in two particulars; it is confined to the lower bowel and is attended with hemorrhage. A diarrhoea may extend along the whole tract of the intestines, but bleeding is rare. It develops into the chronic form in the hotter climates and but seldom in the temperate zone. There may be costiveness in dysentery located above the inflammation, in which case remedies will not act. The liver is congested and the circulation blocked up, hence the veins in the lower bowel are distended. Especially is this the case in malarial districts. The mucous membrane is relaxed; there may be a catarrhal diarrhoea and dysentery follow, or both may exist

simultaneously. Ulceration is not uncommon. There is frequent, painful and fruitless attempts to evacuate the bowels, pain in the rectum and tenderness of the abdomen upon pressure.

TREATMENT.

Rest is necessary in all diseases of the bowels and is an important element here. Begin the treatment with calcined magnesia one teaspoonful in an ounce of sweetened water. If malarious or bilious,

R.—Podophyllin,	.	.	.	.	six grains,
Leptandrin,	.	.	.	.	twelve grains,
Hydrastin,	.	.	.	.	twelve grains,
Extract of Conium,	.	.	.	.	eighteen grains.
Mix.					

Make twelve pills and give one every hour until they operate.

If the pain and desire to evacuate are severe and obstinate, place a pill of opium in the bowel with the suppository syringe, or inject twenty drops of laudanum with an equal amount of slippery-elm mucilage. Apply cloths wrung out of hot water and sprinkled with spirits of camphor, to the abdomen.

R.—Sulphate of Magnesia,	.	.	.	.	one dram,
Ipecac,	.	.	.	.	four grains,
Cinnamon,	.	.	.	.	two grains.
Mix.					

Pulverize and make ten powders and give one in moistened brown sugar every three or four hours. At night give one of the following pills:

R.—Kino,	.	.	.	.	four grains,
Pulverized Opium,	.	.	.	.	two grains,
Leptandrin,	.	.	.	.	four grains,
Pulverized Licorice,	.	.	.	.	two grains.
Mix.					

Make four pills.

If there is not improvement in two or three days

R.—Solution of Persulphate of Iron, . . . one ounce,
 Warm water, ... one pint. Mix.

Strain thoroughly through cloth to avoid any irritating substance, and inject slowly into the rectum. If the whole can be introduced without shock or fainting, the better. Have the patient hold as long as possible. This ends the hemorrhage. It has saved life in our hands and we know will do so in the hands of others.

CONSTIPATION.

Constipation or costiveness may be defined as irregular and tardy movements of the bowels. Another definition would be that the interval between each movement is protracted, or that, instead of an evacuation occurring every morning as is common with those in health, it may happen every other day or every third day. When constipation is habitual, the intervals not only vary but are sometimes prolonged to one, two or three weeks. In this latter condition the excrement is hard, dry, and removed with such difficulty that it receives the name of impacted feces. Most diseases, particularly those that lower the tone of the nervous system, have constipation as a symptom. This symptom receives attention elsewhere in the treatment of each particular disease with which it is connected. Constipation in the healthy arises from two causes; diet and habit. The experience of each person teaches them which articles of food are binding. No two are exactly alike. Commonly the excessive use of fine wheat flour in bread or cake and a scarcity of the fluids, are the chief causes. The use of narcotics and stimulants have the same tendency. But we think the majority suffer from neglectful habits. The call of nature may be slight or imperative, but from some engrossing labor or other trivial affair that presents a plausible excuse, the answer is delayed until a more convenient season. The inclination may not return again until twelve or twenty-four hours have elapsed. One oversight begets another, and in a short time irregu-

larity is the rule and constipation is more or less firmly seated. The plan of building privies two or more rods from the house, thereby exposing people to the inclemency of the weather, is rapidly and rightly growing into disuse. The water-closets and earth-closets in residences and stores are not only advantageous but accord with comfort and health. Shop and factory hands, particularly females, are terrible sufferers from constipation. Superintendents should see that closets are supplied in sufficient number and in convenient places. Already in cities, retail stores are meeting the public wants in this particular.

The *treatment* is simple or complex, according to the severity of the disease. Regularity in the movements of the bowels is the foundation of health, and the sooner the people understand this the better. A regular hour each day should be set apart for this particular purpose, say immediately after breakfast is finished, and nothing should be allowed to prevent the performance of such an important duty. One of the best aids in this matter and the best physic by far is cold water. When the teeth are cleaned upon rising and the throat gargled with water, then a half glass of pure cold water may be swallowed. This has the effect of rinsing the stomach and upper intestines, dissolving the excrement and impelling it forward. By the time breakfast is finished it has reached the exit. If further assistance is necessary a draught of water may be taken upon retiring, and in addition one meal during the day may be composed largely of fruit and grain. We are of the opinion that graham flour is irritating and hence suggest the employment of cracked wheat, oat meal, barley or rice. A fruit that can be had in most latitudes and countries is the apple. Raw, it disagrees with some dyspeptics, but stewed is relished by all. Sedentary habits have their unfavorable influences, hence some exercise, if only walking, is necessary.

When constipation has become more severe, injections of tepid water may be necessary. We prefer to invite the movement from below rather than force it from the bowels. Pills have their proper place and are valuable in commencing our efforts to overcome con-

stipation. We prefer to all others the liver or anti-bilious pill consisting of:

R.—Aloes and Gamboge, each,	. . .	one grain,
Colocynth Compound,	. . .	one grain,
Pulverized Castile Soap,	. . .	one-half grain.

Mix.

The physician meets with cases of impaction of fifteen to thirty days, standing more frequently than the unprofessional would believe. The feces are so hard and the bowels so weakened that it is almost impossible to effect dislodgment by the use of injections and cathartics. A favorite which in almost every instance removes hardened feces, is calcined magnesia. It seems to create a copious flow of water and dissolving the excrement, gently urges it on, until evacuated. We use it in this way.

R.—Calcined magnesia,	. . .	a teaspoonful,
Milk or Syrup,	. . .	two ounces. Mix.

Take at one dose, and repeat every two hours. One hour after each dose take a half-tumblerful of hot lemonade.

OBSTRUCTIONS IN THE BOWELS.

These may be due to misplacement of a knot of a bowel as in hernia or rupture, to malposition of some internal organ as the womb, to a tumor growing in the bowels, or to indigestible substances which have been swallowed, such as fruit-stones, false-teeth and the like.

HERNIAL OBSTRUCTION is detected by the enlargement or swelling in the groin, by the pain, by the motion of the intestines, feeling under the hand like the passing of a wave, by the vomiting which continues with little intermission, and which, at a later stage, is mixed with fecal matter. The bowels become swollen, painful, the patient pale, cold and exhausted. Hiccough is a symptom of dissolution. Every effort should be made to return the hernia into the abdomen. Sometimes position will effect it. A stout person may clasp a person about the knees and hold them with head downward and just touching the floor. Another plan is to have the person lay upon the

back with the hips well elevated and the leg upon the obstructed side well flexed upon the abdomen. The groin may then be gently but firmly rubbed from below upward by the hands of the attendant. The hands should follow each other, beginning with pressure at the lower part with one hand, just as the other is leaving the upper portion. This is called manipulation or taxis. The patient is aware of the fact if the intestine returns to its proper place. Another plan, simple but very important, and to be adopted in case other means fail, is upon the principle of cupping. A fruit-dish or large bowl is heated by burning in it a piece of paper or a teaspoonful of alcohol. While hot, this is to be placed upon the abdomen and allowed to cool; the cooling may be hastened by wiping with a piece of cloth wet in alcohol. Some slight pressure should be exerted upon the vessel so as to prevent the ingress of air. When cool it has taken up considerable of the flesh and will hold securely. Lifting this upward evenly, and with care so as to prevent loosening, much force may be used. The result is that there is a drawing inward toward the cup, and if fortunate in the experiment this will draw the strangulated gut back to its place. If possible, the timely aid of a surgeon should be secured.

Constipation, due to falling backward of the womb, is neither so dangerous nor accompanied with such violent symptoms as the above. With the womb restored to its natural position and kept there by artificial support or other means, the relief is immediate, and with no other cause in operation, the bowels resume their natural functions.

Obstruction does not always immediately follow the swallowing of indigestible substances. When it does it is more readily and successfully treated because the cause is known. In such a case a hearty meal may be taken of mush and milk, to be immediately followed by the administration of prompt and powerful cathartics, such as

R.—Podophyllin,	.	.	.	.	.	four grains,
Pulverized Opium,	.	.	.	.	.	two grains,
Cream of Tartar,	.	.	.	.	.	one ounce.

Mix.

Mix thoroughly and make four powders and take one every hour.

Or

R—Croton Oil, ... two drops,
Olive Oil, ... thirty drops.

Mix and take ten drops every twenty minutes.

INTUSSUSCEPTION is a common kind of intestinal obstruction. It results from injuries, and in children sometimes from tossing them in the air and catching them upon the hands, the fingers pushing upon the abdomen. The bowel slips upon itself or into itself. The condition may be likened to the folds of a glove upon the finger which has been on, partly pulled off by folding over itself and again drawn back, making three thicknesses (two folds). Inflammation follows quickly, hemorrhage takes place, and in a short time decay. If the swelling is sufficient to close the tube, it is still curable, but if the intestine divides by sloughing the case is almost hopeless. The symptoms are pain at the points of folding and a bunch resembling a tumor to the touch, followed by vomiting, constipation and soon by bloody diarrhœa.

The treatment is an effort to unfold the bowel by one or two methods. First, by the use of a cathartic such as calcined magnesia, which will, by inducing peristaltic action, relieve; or secondly, by copious injections of water into the rectum, which has a mechanical effect only. It is expected by excessive extension of one part of the intestines to stretch another and perhaps the part folded. In case of such a fortunate event, manipulation will discover that the tumor has disappeared.

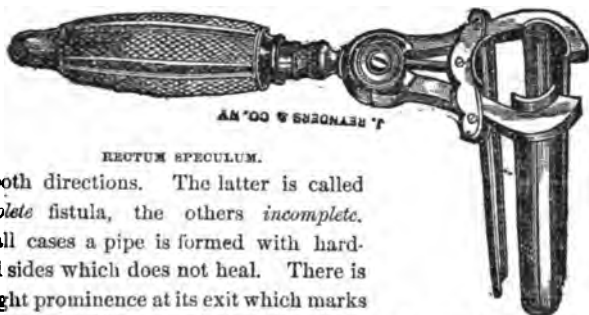
DISEASES OF THE RECTUM.

The *rectum* is the terminal portion of the bowel and has upon its lower border a circular opening called the *anus*. This opening is controlled by a strong *sphincter* muscle. The diseases to which this part of the body is most subject are *Fistula* or pipes through the flesh; *Fissure* or ulcerated cracks; *Piles* or painful tumors, sometimes bleed-

ing; *Prolapsus* or falling of the rectum beyond and outside of the sphincter muscle and *Stricture* or closure of the pipe.

ANAL FISTULA.—*Fistula in Ano.*

These begin in abscess, ulcer or injury as by penetration with a fish bone. The abscess may find its way to the bowel and open inward, may burrow to the skin about the anus and open outward or spread



RECTUM SPECULUM.

in both directions. The latter is called *complete* fistula, the others *incomplete*. In all cases a pipe is formed with hardened sides which does not heal. There is a slight prominence at its exit which marks its location. Matter is discharged from it. In complete fistula gas and fluid portions of the excrement pass through and soil the clothes. A fistulous tube may have several branches and external openings with fortunately but one into the rectum. The pain and soreness of incomplete fistula is often ascribed by the patient to piles. Careful examination will decide the matter. When the history discloses the previous appearance of a swelling (the abscess), painful while it remained but which rather abruptly departed, suspicion strongly points to fistula.

TREATMENT.

Two plans are adopted. One by the knife in which the pipe is laid open by an incision carried through the flesh lying between the fistula, bowel and external surface. The other by a ligature passed through the pipe and bowel and tied. This is daily tightened until it cuts its way through. The former is more prompt, the latter more

tedious and painful but less dangerous. Caustics are used to destroy the callosity of the fistula before the ligature is inserted. Cure, to be complete, must include all the tubes. In persons with pulmonary complaint the question of sufficient strength to bear the shock must be decided before operation. In all cases the blood should be purified and the system brought to its best condition before local treatment is undertaken.

FIGURE.—*Fissura Ani*.

This, as its name implies, is a cleft or crack in the folds of the mucous membrane of the anus of an ulcerous nature. It is attended with itching and pain. The pain is not increased during stool; but occurs sometime after a passage, a half hour or so.

TREATMENT.

The fissure should be kept clean and the bowels soluble. Introduce every night into the bowel a piece of lint wet in a solution of one part of tannin and ten parts of glycerine. The antiseptic ointment answers every purpose and heals the parts promptly. At night the self-retaining pile-pessary may be introduced well covered with the ointment.



PILE-PESSARY. self-retaining.

FALLING OF THE RECTUM.—*Prolapsus Ani*,
Proctocela.

From relaxation of the muscular walls of the rectum or fibres of the sphincter muscle, or both, the mucous coat becomes inverted and escapes outside the body. The extent to which the bowel may fall varies, some cases being reported in which six inches have protruded. Heavy lifting, jumping, straining at stool, excessive and exhausting labor during hot weather, sedentary habits and constipation are among the usual causes. There is a feeling of fulness and weight about the anus, a continual effort is made to constrict the muscle,

the step is measured in walking, elevations are avoided and the thighs are closely approached. The hand is carried frequently and almost involuntarily to the fundament to afford support and replace the prolapse.

TREATMENT.

For cases of long standing the pile compressor is recommended. This is a truss made for the purpose of affording artificial support and is comfortable and effective. Means hereafter mentioned may then be employed to restore tone to the relaxed muscles. If of recent date rest a few days in bed with the hips and feet elevated and the shoulders low. Use fluids for food, such as milk, soups, and fruit. Abstain from wheat bread, coffee and tobacco. The bowels may move several times a day under this treatment, but the defecations are soluble and unirritating. After each movement bathe the inflamed parts with witch hazel tincture, a tablespoonful to a pint of cool water and return the bowel. Knead the abdomen gently when laying down. Take every two hours a teaspoonful of

R.—Tincture of Nux Vomica,	.	.	thirty drops,
Tincture of Witch Hazel,	.	.	one dram,
Water, sweetened,	.	.	four ounces.

Mix.

Upon retiring pass into the rectum a suppository made of anti-septic ointment and tannin, a teaspoonful of each. Divide in four. Use one. Upon first attempting to walk or work, use the self-retaining pile-pessary. Even if it is not used, it may be well to have it in the pocket in the case of emergency. This treatment succeeded on two occasions in the author's personal experience.

STRICTURE OF THE RECTUM.

The diminished or contracted condition of this part of the bowel may be spasmodic or permanent. These are distinguished from each other by passing up the rectum a bougie about the size of the finger. If it passes at one time and not at another, it is spasmodic. Perma-

nent stricture may be benign or malignant. In the latter it may be cancerous, particularly if high up or just within reach. In stricture, the feces will be expelled with difficulty and are ribbon-like, or like tape-worm, or like small bullets. The cure is by forced dilatation, which is accomplished by properly constructed instruments.

HEMORRHOIDS.—*Piles.*

Piles are painful tumors situated within or near the anus, resulting from excessive dilatation of the veins distributed to the lower bowel. In most cases there is impairment of health. They are called blind, bleeding, external or internal, according to their character and position. Whenever people neglect to attend to the regular evacuation of the bowels, disregard the necessity of physical exercise, indulge habitually in rich food and stimulating beverages and allow the pores of the skin to become clogged with impurities, piles will be the result. The habit of sitting continuously for a length of time is popularly considered the principal cause, but a little investigation will show that printers, and others who stand at their work, are as much affected as the sedentary class. When hemorrhoids are commencing there is some pain and uneasiness about the rectum, with itching about the anus, and darting pains in the loins and pelvis; headache, vertigo, and flushes of heat sometimes; languor, disinclination to exert mind or body, and irritable and peevish temper. Restlessness, loss of appetite, coated tongue, nausea, constipation, may be present. Small painful tumors will then be found at the margin of the anus or just within the rectum. Although slow in forming, they appear to the patient suddenly while straining at stool, when the feces are hardened. Soon they increase in size, become tender and painful, slip out of the bowel and bleed. The tumors can be replaced by the fingers at first, but the time comes when they remain protruded. Constipation becomes habitual and the abuse of cathartic medicines, or their injudicious selection, increases the difficulty. The countenance becomes sallow, the skin dry and harsh, the spirits depressed, with frequent headache and

back ache. The disease sometimes lasts for years without giving rise to any external evidence of deranged health. On the other hand the constant irritation may so annoy, and the bleeding so deplete, as to tell upon the general health. Piles may discharge at the menstrual period.

The indications are to disgorge the bowels, keep the movements regular and soluble, free the liver circulation, and with it the circulation in the distended veins, and relieve local inflammation and hemorrhage.

TREATMENT.

It is almost unnecessary to say that mechanical obstructions must first be removed, such as abdominal tumors, tight clothing about the waist, chronic liver disease, pin-worms in the young; diseases of the womb, as congestion and retroflexion, must first be cured. In the latter months of pregnancy, relief only can be expected. The first indication is met by the use of an efficient but unirritating anti-bilious physic, as elsewhere noticed, or teaspoonful doses of calcined magnesia in sweetened milk, twice daily, for two or three days, or

R.—Aloes, (socotrine),	.	.	.	twelve grains,
Extract of Nux Vomica,	.	.	.	six grains,
Extract of Hyosciamus,	.	.	.	eighteen grains.

Mix.

Make twelve pills and take one pill two or three times daily. The bowels may be kept regular by the use of grain and fruit diet, abstinence from use of tobacco, and general directions noticed when treating of constipation. For the hemorrhage, a solution of tannin one ounce in half a pint of water, may be used as a wash or as injections. If the piles are external, apply the tannin in powder, or the powder of persulphate of iron. If internal, one dram of the persulphate can be mixed with one ounce of antiseptic ointment and passed into the bowel by a suppository syringe. This syringe is made of hard rubber and has a hole about one quarter of an inch in diameter its whole length. This is filled with the ointment and then



SUPPOSITORY SYRINGE.

introduced into the bowel. The piston is now pushed through, which dislodges the suppository when the instrument is withdrawn. It is simple but convenient and valuable. Care should be used to smear the outside with the ointment, which facilitates its use, and to cleanse it thoroughly with soap and warm water after use. If the hemorrhage is excessive, the patient should seek the recumbent position, and the persulphate of iron mixed with water, should be used as an injection. The inflammation may be overcome by rest, plain food and frequent bathing the parts with cool water. or, much better, water to each pint of which is added a teaspoonful of tincture of witch hazel. The application of an antiseptic ointment alone to the anus each night upon retiring, has a remarkably soothing, healing and beneficial effect.

ORDER IX. DISEASES OF THE KIDNEYS AND BLADDER.

INFLAMMATION OF THE KIDNEYS—RENAL CONGESTION.—*Nephritis.*

This malady is not so frequently met as a disease of itself as an accompaniment to other affections and constitutional disturbances. Renal congestion attends most malarial and eruptive fevers, some heart and lung diseases, and sometimes inflammations, colds, rheumatism, and pregnancy; inflammation attends injuries, calculus, and the use of alcoholic beverages. Congestion affects both, and inflammation generally but one kidney, otherwise their symptoms are the same, except in intensity. There is dull or sharp pain in the small of the back, tenderness upon pressure, feverish pulse and skin, numbness of thighs, testicle drawn up, and urine passes with difficulty, or may be entirely suppressed; that passed is scanty and dark-colored. The urine may be bloody and sometimes contains purulent matter, (*pyelitis.*)

It is distinguished from lumbago by causing little if any increase in the pain upon bending the body, so as to call into play the muscles of the back; from colic by having fever and urinary troubles, and by the pain being in the back; and from Bright's disease by the absence of albumen; by retraction of the testicle and by greater fever.

TREATMENT.

It is evident that diuretics or those remedies which stimulate the kidneys are out of place here; in fact turpentine, cantharides, etc.,

oftener produce nephritis than relieve it. The treatment of renal congestion occurring so frequently in fevers admits of them in a mild form; we prescribe

R.—Spirits of Nitre, ...	three drams,
Acetate of Potash, ...	two drams,
Tincture of Colchicum seeds, . .	four drams,
Essence of Wintergreen, ...	one dram,
Water, ...	three ounces.

Mix.

Dose, a teaspoonful every two, three or four hours. In pregnancy the congestion results from pressure, not so much upon the organs as upon the blood vessels supplying them. The relief comes with delivery.

Unless something counter-indicates, we prefer by revulsive measure to equalize the circulation by calling upon the skin and bowels to carry away the fluids and impurities; substitute the functions of the kidneys and rest these organs. Foremost among such means stands the spirit vapor bath. This may be assisted by the use of calcined magnesia in teaspoonful doses in milk or water every three or four hours, if deemed necessary. When the strength will admit and a change of irritation to the bowels is desirable

R.—Podophyllin, ... , .	two grains,
Cream of Tartar, ...	two drams.

Mix thoroughly and make four powders.

Give one in syrup and repeat every three hours while necessary.

BRIGHT'S DISEASE.—*Albuminuria*.

Bright's disease is becoming common in this country, and in most cases is directly traceable to the excessive use of alcoholic beverages as a cause. It may however be produced by prolonged exposure to cold and moisture. It often accompanies pregnancy, and if excessive at the time of delivery, is likely to culminate in convulsions. It follows or accompanies other diseases, but more

especially scarlet fever and specific diseases of the urinary tract. Its beginning has much the appearance of chills and fever, with the nausea, sometimes vomiting, pain in the head and back, and difficulty in breathing. The water passed is scanty, dark-colored and loaded with albumen, which gives the name to the disease. Following this a general dropsy of the surface is noticed, particularly of the face and legs, and sometimes in the chest or abdomen.

It is distinguished from other diseases affecting the lower part of the back principally by the examination of the urine. We cannot here describe the distinctive tests which are made by the microscope, but any person may discover the presence of albumen. A small portion of the water is placed in a test tube or other glass vessel, and the fluid heated to the boiling point. A few drops of nitric acid is then mixed with the fluid, and the albumen becomes white, resembling to some extent the white of an egg when subjected to heat.

The kidneys are sensitive to the touch. The pressure upon the small of the back on either side of the spine causes pain.

The indications are to remove the local congestion and to eject fluid from the body through other channels, thus relieving these organs.

TREATMENT.

A paste of ground mustard mixed in cold water may be applied to the small of the back, over the kidneys, but should be removed before blistering, and a cloth wet in oil put in its place until the redness disappears. The process can then be repeated. If the pain is severe a hot compress may be applied or a liniment composed of

R.—Tincture of Aconite root,

Tincture of Arnica,

Laudanum, ... equal parts of each.

Mix and apply by a cloth. All remedies tending to increase the flow of urine should be carefully avoided.

The spirit or the Turkish bath are of great importance. Fluid may be carried away by the bowels by the use of

R, —Podophyllin, ... two grains,
 Cream of Tartar, ... one ounce.

Mix and divide into four powders. Take one in syrup or molasses. Another plan, having the advantage of being more pleasant, is to administer teaspoonful doses of calcined magnesia every two hours, taking an hour after each, a glass of lemonade. When the bowels have moved freely the cathartics should be discontinued and a pill or powder of tannin, one grain, taken every two hours, with or without the citrate of iron and strychnia pills. The diet should consist principally or exclusively of milk. When an exclusively meat diet is used, albumen, in quantities, sometimes great, sometimes small, appears in the urine. Wheat gluten is valuable, but is unpleasant to many if taken alone, from its tenacious character and raw taste. Considering the nature of the difficulty, such objections should be overruled, but habit and appetite are almost uncontrollable.

When the disease becomes seated the indications of treatment remain about the same, but the difficulty does not yield so readily and in fact will sometimes baffle the most skillful.

As a rule every inflammation of the kidneys, if of recent appearance, may be successfully treated by this plan.

HÆMATURIA or bloody urine is removed by the same means, with, however, a single exception. Instead of lemonade, frequent drink of a tea made of dried peach leaves should be taken. Some of the worst cases yield to this decoction within forty-eight hours.

URÆMIA is poisoning of the blood by urea, a common constituent of the urine, and which, from the inactivity or congestion of the kidneys, is retained in the system. It may be suspected when the patient has not passed water for a considerable length of time; from one to three days. Before this opinion is formed, however, a careful examination should be made to see that the bladder is not greatly

distended. If it is, a solid ball will be felt immediately above the pubic bone. But when the bladder is empty retention may be suspected. When unrelieved, we have, following closely upon each other, the symptoms of severe headache, bowel disturbances, twitching and coma or gradual increasing insensibility. Uræmia is but a symptom of a disease and that disease usually is congestion of the kidneys; so that the course of treatment above recommended is well suited to retention.

SUGAR IN THE URINE.—*Diabetes Mellitus.*

Sugar in the urine can only be detected by chemical test, and when found upon a single occasion has little significance. When the amount of the urine passed is excessive and appears to increase, not so much from day to day as from week to week, chemical examination should be made daily, and if sugar is present a correct diagnosis can be made. Rarely does the disease come to the physician's attention in its earlier stages. This is due to the fact that the accumulation is great and evacuations take place so frequently and with such freedom that the afflicted parties incline to the belief that their health is improved rather than retrograding. Increasing thirst may be first noticed, or perhaps, loss of flesh, slight but gradually augmenting, accompanied with dry and rough skin, parched mouth, tenacious saliva, catarrh of the lungs and bowels, finally terminating in dropsy of the limbs, hectic fever, and the other conditions and symptoms properly belonging to consumption.

It is distinguished from other urinary difficulties by the excessive urination and the presence of sugar.

The indications are two-fold: to diminish to the least possible amount the starch or sugar taken with the food, and to administer such judicious tonics as will prevent the liability always present in this disease, to take on local inflammatory processes.

TREATMENT.

This is somewhat clouded in doubt, on account of the want of an

exact knowledge of the disease. All physicians are agreed that starchy and sugary food should be discontinued. This excludes from the dietary potatoes, bread, sweetmeats and fruits. The diabetic flour and crackers have the starchy principal extracted. The bitter tonics and the citrate of iron and strychnia have been recommended, and in some instances, have cured. The cod-liver oil and hypophosphates recommended in consumption, are of advantage in affording nourishment and retaining strength. We believe it to be a disease of the blood and nervous system, and our treatment, based upon this theory, gives far better results than any other. The Turkish bath or spirit vapor bath, is a valuable adjunct. Exclusive meat diet with green vegetables and a diet of skim milk, are strongly advocated. Better consult a good physician early. *Diabetis insipidus*, in which there is an excessive flow of urine but no sugar, is more susceptible to curative measures.

IRRITATION OF THE BLADDER, VESICAL IRRITATION.

Males are frequently troubled with this complaint and usually imagine that it arises from, or actually is, the specific disease. There is a slight mucons discharge. The desire to pass water is frequent and urgent, and there is pain when the urine starts and stops. The mouth of the urethra is not red and swollen as in gonorrhœa. The patient complains of a dull ache and a sensation of heaviness between the anus and scrotum.

TREATMENT.

In many cases it will vary little from that about to be recommended for inflammation of the bladder. The bladder, its neck, and the prostate gland are so close to the rectum of the male that treatment may be given by this channel. A two or three grain pill of opium lodged in the rectum at night and in the morning will be all that is necessary.

INFLAMMATION OF THE BLADDER.—*Cystitis.*

Inflammation of the bladder is not always confined to the organ in question, as its name would imply. Its inception is local, but from the contiguity of tissue it may spread upward toward the kidneys, downward along the urethra; may involve the peritoneum, the prostate gland of the male, or the vagina and uterus of the female. This inflammation may arise from external or internal causes. Among the former the principal is from injuries. Internal irritation may arise from the presence of stone and, which is most general, from irritating urine, particularly that confined by stricture. Certain substances, as turpentine taken with the food, may inflame the bladder.

The symptoms are local and always attended with more or less pain. This pain is seated low down in the abdomen and to the front, immediately above the pubic bone. There is pain and more or less scalding upon passing water. The desire to micturate is frequent, attended with little flow and preceded and followed by violent contractions of the organ, (tenesmus.) The urine is scanty, high-colored, and deposits a cloudy or milky substance, sometimes tinged with blood.

It is distinguished from inflammation of the kidney, principally, by the locality of the pain; that of the kidneys being in the small of the back; from inflammation of the womb by the greater bloating and by the higher fever, together with menstrual irregularities. Occasionally the falling forward of the womb causes direct pressure upon the bladder, inflaming it.

Chronic Cystitis is more commonly known by the term of *Catarrh of the bladder*. It is of long standing, develops more tardily, and is recognized by the patient by the frequent desire to urinate, the small amount escaping and the continual presence of a thickly viscid deposit in the water. The pain is not so great as in acute attacks, but although less severe in character, is almost constantly present.

The indications are to remove the physical causes of irritation, if any exist; to change the character of the urine and preserve its nor-

mal standard; and to relieve the inflammation and limit its spreading.

TREATMENT.

If calculus or stone has already formed, surgical means must be sought for its removal. The same may be said of the satiated womb. If gravel in fine particles is passing, the adoption of a proper diet and the employment of the means about to be mentioned would be sufficient.

A kind combination which not only affects the character of the urine, but calls into activity the bowels, and assists in removing morbid matter from the bladder, is the following:

Citric acid, ... four drams.

Pulverize and divide into eight parts. Put in blue papers. Also

Bicarbonate of Potash, ... one ounce.

Divide into eights parts. Put in white papers.

The above are administered the same as Sedletz powders. In a half tumbler of water is dissolved a powder in the blue paper. And in another half tumbler of water is dissolved a powder in the white paper. To one of the tumblers add a teaspoonful of sugar. When each are well dissolved pour together and drink rapidly. The effervescence is but momentary, and it is during its action that the drink should be taken. This should be repeated every two hours.

The inflammation may be treated in several ways. A hot compress may be laid upon the lower abdomen, with advantage; or a mustard paste made of pulverized mustard and ginger, may be applied and continued until the surface is well reddened, then remove to make way for the compress. An injection should be thrown into the bladder. The difficulty in the way of adopting this treatment lies mainly in the introduction of the catheter.

While the operation is a simple one in the hands of a physician, it is not only complicated and difficult, but sometimes likely to be attended with injury, when attempted by a novice. What is wanted in case the draughts and revulsives above indicated are not sufficiently successful, are the cleansing and soothing influence of glycerine and the healing property of golden seal. My remedy is

Glycerine, ... one-half ounce,
Fluid Ext. Golden Seal, . . one dram.

Mix and add to a pint of warm water a table-spoonful. Fill the bladder with this mixture every three or four hours.

There is a method of injecting fluids into the bladder without the use of the catheter. If a stream of water or other fluid is introduced into the urethra, it will, if entering under sufficient pressure, gradually dilate the sphincter vesicæ, and it may be caused to enter the bladder when through inflammation or otherwise the urethra is so sensitive as to prevent the passage of a metal or gum catheter.

In Dr. Bertholè's method the patient sits on the floor with his back against the wall, thighs and knees turned out, and the toes turned in. A vessel is placed conveniently to catch any water which may escape. An irrigator with a long tube, with a stop-cock somewhere in its course, is placed upon a bench near by. The tube of the irrigator is well oiled and is inserted into the urethra; and the patient keeping this in place with the left hand can easily regulate the flow of the fluid with his right hand upon the stop-cock. When the latter is opened, the water usually penetrates into the bladder without the patient's being conscious of its entrance. So soon as he feels the desire to urinate, the stop-cock is to be turned off, as the bladder is then full. The patient can now empty the bladder at once or can retain the fluid some little time. The water should be warmed to the temperature of the body, and the best time for employing the injection is just before going to bed. A single injection, in cystitis, will thin the stagnant urine and deprive it of its irritating quality.

HAND RUBBER CATHETER.

The sulphite of soda is a good remedy in five to ten grain doses three times a day.

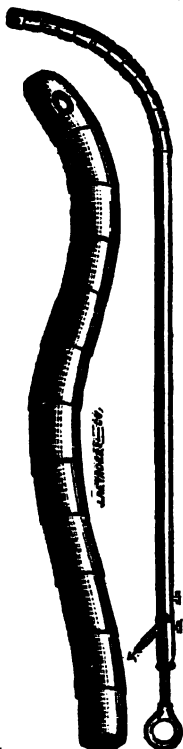
RETENTION OF URINE.—*Dysuria, Stranguria, Ischuria.*

The medical terms express the different degrees of retention: in dysuria the urine passes from the bladder, but is accompanied with pain; in stranguria, the neck of the bladder is inflamed and the urine only escapes in drops; and in ischuria, no matter how full and distended the bladder, there is complete inability to evacuate it through the natural channel. In all cases, retention implies that there is fluid in the bladder and that it is discharged with difficulty, or if complete, expulsion is impossible. This is a common complaint, occurs in all ages, and has many and various causes. It will be necessary to notice these in order that a rational treatment may be used. It arises from obstructions such as stone in the bladder, enlarged prostate gland (prostatitis is a common affection of the aged), stricture of the urethra and anti-flexion of the womb; from irritation by drugs, as cantharides or Spanish fly, turpentine, and in one instance we found it result from an extensive blister upon the surface made by croton oil, also intestinal worms and dysentery. It is frequent in some diseases as fevers, particularly scarlet fever, gonorrhœa and syphilis: attends hysteria, some affections of the brain, and paralysis general and local. The water may be held until by over-distention contractility is lost and the retention is complete. In most instances what is at first incomplete may become complete.

TREATMENT.

Generally there is no great hurry, so that mild means may be employed before recourse is had to instrumental relief. In hysteria it is only necessary to plunge the hands into cold water. In fevers, apply a hot compress sprinkled with spirits of camphor over the region of the bladder. Another plan is slipping a piece of ice into the rectum or giving a small injection of ice water. Sitting in a tub of warm water is sometimes effective. Some persons in health are unable to pass water in the presence of a second party: this timidity

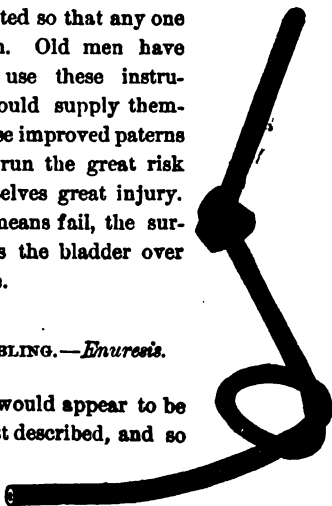
may be aggravated during sickness, and attendants should recognize the fact and always leave the room when a patient attempts to micturate. The sound of running water influences some favorably. For children with worms, give *santonine* (see worms). We remember a patient, a lad of ten years, who was dosed a whole year for diseases of the kidneys and bladder, who was cured in two days by this remedy. In very small doses it is good for retention in infants in every case. Mix five grains with a teaspoonful of sugar. Give ten grains every hour. In adults, when retention results from paralysis, obstructions or distention, it will be best to use the catheter. These are now manufactured of soft rubber, or jointed so that any one may pass them. Old men have frequently to use these instruments and should supply themselves with these improved patterns and no longer run the great risk of doing themselves great injury. When other means fail, the surgeon punctures the bladder over the pubic bone.



JOINTED CATHETER.

INCONTINENCE OF URINE, DRIEBLING.—*Enuresis*.

Inability to withhold the urine would appear to be the opposite of the condition just described, and so it is in many cases, but sometimes in fevers we have dribbling with retention. The bladder is so full that that which escapes may be called the overflow. Hence the



SOFT RUBBER CATHETER.

necessity of daily examination, for the touch will easily recognize the hard round ball above the pubic bone if the bladder be full. Incontinence attends other diseases such as stone in the bladder, worms, constipation, masturbation, womb diseases, acid urine, binding foreskin, etc. The urine may escape only at night, (bed-wetting) or by day and night. It increases by laying upon the back, may come suddenly by fright, or in those of relaxed habit, by coughing. Bed-wetting in children, if habitual, is quite probably involuntary, and the child is unconscious of the act. There are several types of this malady. In one the dribbling continues day and night, is influenced by coughing, and the person is unable to throw a strong stream; the bladder occasionally retaining the urine for a short time, the demands for micturition requiring prompt attention. In another there is no trouble during the day, the person can project the fluid with force, but the escape occurs at night. In the aged, the urine is voided continually; there is change of structure and relief is doubtful.

TREATMENT.

It will be well to avoid liquids the latter part of the day and evacuate the bladder just before going to bed. The bed covering should be light and the mattress hard. A cold bath every morning and attention to diet, will allay irritation and assist medication. In the first class described we would use

R.—Tincture of Nux Vomica,	.	.	.	one dram,
Tincture of Witch Hazel,	.	.	.	one dram,
Tincture of Wintergreen,	.	.	.	one dram,
Simple Syrup,	.	.	.	four ounces.

Mix.

Give a teaspoonful every four hours, and two at bed time. Or

R.—Fluid Extract of Ergot,	,	.	.	one ounce,
Simple Syrup,	.	.	.	four ounces.

Mix.

A teaspoonful every four hours and at bed time.

In the case of spasmodic incontinence, which occurs only at night, belladonna is a better remedy. This may be given in one-quarter grain pills of the solid extract (English), at bed time, increasing gradually to three or four at a dose, if found necessary.

A simpler but highly recommended remedy that may be used in both cases is the syrup of the iodide of iron and glycerine, in equal parts. Give a teaspoonful three times a day. Worms and other sources of irritation, should be removed. Some of these cases are intractable, but nine out of every ten can be cured. If the above means do not cure after a fair trial, better submit the particulars to a skillful physician. The aged and incurable will consult comfort and cleanliness by wearing a rubber urinal. In male children with bind-

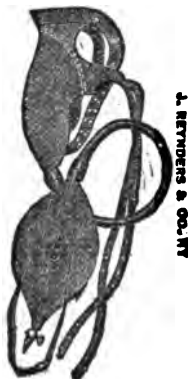


Fig. 2.



Fig. 3.



Fig. 4.

ing foreskin (phimosis), bed-wetting is sometimes cured by Fig. 1.* circumcision. The operation has other beneficial results even if it should fail in this particular. Boys can prevent these unpleasant signs of incontinence by sealing the foreskin or the urethral

* Fig. 1 & 2 Urinals for males, day and night; Fig. 3 for day use only; Fig. 4 Urinal for females.

orifice with collodion. Apply with a brush. It dries quickly, completely closes the canal and prevents escape. When it is desirable to micturate remove the plug with the finger nail.

SUPPRESSION OF URINE.—*Anuresis.*

This condition should not be confounded with retention, where the bladder is full, but the urine is not voided. In suppression there is disease of the kidney and secretion is impaired or discontinued. The bladder is empty and no urine passes. This is dangerous because the blood becomes poisoned with the impurities and waste material which find exit through the urinary tract, and, as a consequence, the brain is overwhelmed. This occurs in diseases of the kidneys and during or following fevers.

TREATMENT.

We want to relieve the congested condition of the kidneys and carry away the suppressed fluids and impurities. A cathartic of calomel repeated every two or three hours until free watery discharges, will do this. But we have a better and more decisive means in the spirit vapor bath. The two may be combined if considered necessary. This will be found to work better than using diuretics to stimulate the kidneys, which, in suppression, are of doubtful utility.

GRAVEL IN THE KIDNEYS, BLADDER OR URETHRA, see pages 491 and 492.

CLASS IV. GENNETIC DISEASES.

ORDER I.—OF MAN.

EMISSIONS.

These are the occasional discharges of semen or seminal fluid in the male. They occur most frequently in the unmarried, but are not confined entirely to this class. Their frequency is much greater in the excitable, the debilitated and those of strong animal propensities than in the robust, the almost passionless and those whose habits or occupation calls for much physical exercise and labor. These discharges or "losses" as they are sometimes termed, because they take place independently of the will, almost invariably occur during the latter part of the night. Sensibility is restored during the ejaculatory effort. Occasionally a dreamy, semi-conscious state of mind exists immediately preceding the act which offers a golden opportunity to those of strong will, and so inclined, to arrest its progress. Arousing at once, changing position, and directing the mind to other matters will succeed in averting the catastrophe. That habit of mind which fosters a determination to be on the alert for the event, coupled with unstimulating or hygienic living, is here richly rewarded, from one to six months passing with but a single emission, the time varying *ceteris paribus*, with the temperament of the subject. This is *natural* and should not unbalance the mind any more than it does the body. A feeling of lassitude may be noticeable the day following, but soon disappears.

CONTINENCE.

So excellent an authority as Mr. Acton states that the occasional occurrence of nocturnal emissions or wet dreams is quite compatible with health and is to be expected as a consequence of continence, whether temporary or permanent. It is in that way that nature relieves herself. Continence, to be complete, must be both physical and moral; the thoughts must be pure as well as the body chaste.

Says Prof. Newman: "Considering that in man the sexual appetite is not, as in wild animals, something which comes for a short season, and then imperatively demands gratification, but on the contrary, is perennial, constant, and yet is *not* necessarily to be exercised at all, his nature cannot be harmonious and happy, unless it can right itself under smaller derangements of balance. But this is precisely what it does; and I cannot but think it of extreme importance not to allow a bugbear to be made out of *that*, which on the face of the matter, is God's provision that the unmarried man shall not be harmed by perfect chastity. That it is ever other than natural, normal and beneficial, I never heard or dreamed until I was past the age of fifty.

"On gathering up what I know, what I have read and what I believe on testimony, I distinctly assert—first, that this occurrence is strictly *spontaneous*,—that it comes upon youths who not only have never practiced, but have never heard of such a thing as secret vice; that it comes on without having been induced by any voluntary act of the person and without any previous mental inflammation: next, that it occasionally comes upon married men, when circumstances put them for long periods in the position of the unmarried; moreover even when they become elderly it does not wholly forsake them under such circumstances. My belief is that it is a sign of vigor. At any rate I assert most positively that it is an utter mistake to suppose that it necessarily weakens or depresses or entails any disagreeable after-results whatever."

We have Sir Benjamin Brodie also as an authority for stating that

the young man cannot expect to entirely free himself from emissions till marriage.

Hence to a limited extent the operation of this function is in accordance with health. The question of vital importance is, at what point is found the boundary of health, beyond which we may conclude it to be a disease. All functions are deficient, normal or excessive. The former and latter are considered disease of function. At this time we have only to do with the latter.

"In man," remarks Kolliker, "the capability of producing semen, assuredly, always exists; although it does not appear to me to follow from this that *semen* is being continually formed, and that what is not emitted undergoes absorption: and consequently it seems justifiable to suppose that the seminal tubes secrete semen only when the secretion has been partially evacuated externally—either in consequence of sexual congress or of seminal emissions—and an excitement of the nervous system has caused an increased flow of blood to the testes."

It is apparent that that which goes to make semen would if withheld in the system, make blood and muscle. It is also obvious that the amount of vital or nervous force which is required in the elaboration of the one, can be conserved and diverted to build up the other. Hence when the amount evacuated is excessive, the amount of vitality and nutritive elements required to keep up the secretion is excessive, and the body in other respects must suffer. This defines the limit and also establishes the rule that when the emissions produce weakness and debility they require treatment. Fortnightly or more-frequent emissions in most men are exhaustive and come under this head.

Of those endeavoring to lead a continent life, the ill effects of too frequent losses are confined to the unwary, the imprudent and the careless. The unwary suffer because they do not fully appreciate the liability to danger and are as a consequence not on the watch for lascivious dreams and their possible issue. The imprudent and careless fail from all the causes which produce stimulation of the gener-

ative organs. These are a full bladder upon retiring, constipation, late suppers, the use of tobacco and malt and alcoholic liquors, stimulating foods, the use of fruits late in the day, which tends to distend the bladder during the night, lying upon the back, irritating secretions upon the member, the result of uncleanness, and lewd thought and deportment. One cause, and a purely physical one, is a noteworthy exception to these; the excessive sensitiveness caused by elongated foreskin. This requires circumcision;—the others are removed easily and demand only thought and attention. This subject we will further consider under the title of

SPERMATORRHOEA.

Among medical authors there is a wide difference of opinion in regard to the correct description and definition of this disease. It is not to be wondered at, therefore, that the public at large should possess vague ideas and conflicting opinions respecting it. The young and middle aged man gathering with eager curiosity the ideal, romantic and vividly colored pictures in pamphlets and books emanating from quacks and their associates, finds not only every normal function of the reproductive organs misinterpreted, but their minutest irregularity greatly magnified (respecting their effects) and results connected only with the most extreme cases portrayed as natural and certain consequences.

A simple definition is, the *unnatural loss of semen* and its consequence. This is not a strictly correct one, but enough so to cover our purpose, and should be so interpreted in the lines that follow; any additional significance will be mentioned at the time the term is used.

The earliest writers called it *tubes dorsalis*, a wasting of the back, because attended at first with a pain in the back or loins and afterward in the neck or head. Possibly, from its effects upon the nervous system, the idea was entertained that the loss was in reality the

brain substance itself. Camus declared it to consist of microscopical brains having the brain as their source.

From the careful inspection of the histories of very many so afflicted, the majority become afflicted from one of two causes: in the married, sexual excesses, and in the married and unmarried, masturbation or self-pollution. In the former there is the lack of that good judgment which should govern all passions in order to reach the perfection of life, health and happiness. In the latter, a pardonable ignorance for which the timid or procrastinating parent is much to blame.

All must coincide with the views of Sir W. C. Ellis:—

“However revolting to the feelings it may be to enter upon such a subject, it cannot be passed over in silence without a great violation of duty. Unhappily, it has not been hitherto exhibited in the awful light in which it deserves to be shown. *The worst of it is that it is seldom suspected.* There are many pale faces and languid and nervous feelings attributed to other causes, when all the mischief lies here.”

At a convention of physicians in England, upon the discussion of the subject of spirituous liquors, it was agreed that much of the cause of intemperance should be laid at the doctors' door. Very many of the afflicted complain that the habits of inebriety began with a prescription. How much more ruinous is the advice that occasional masturbation is health-giving and necessary. The reasons given for it are silly and unscientific. That chafing the member will unload the seminal reservoirs and prevent emissions is certain. Will such advisers be responsible for the results? Do they fully appreciate the fact that it takes the first glass to poison the appetite and lay the foundation of an irrefragable habit? “It is easier,” remarks Acton “to abstain altogether than to be occasionally incontinent and then continent for a period; and the youth is a dreamer who will open the flood-gates of an ocean and then attempt to prescribe at will a limit to the inundation.” That this function is physiological, we admit, but that its use is necessary to preserve its

normal standard, we emphatically deny. Those having special objects in view contend that restraint cannot be practiced without damage, both mental and physical. Professor Burt G. Wilder ably refutes this sophistical proposition in the following language:

“Who and how many are they that are now unable to restrain their animal passions? Surely they are very few at this day, however numerous they may have been a century ago. For at that time men were large, full of blood and animal spirits, comparatively coarse in organization, and able to do and to endure what is beyond our powers. They worked harder, they drank deeper, they had less brain and more blood. Many even within our remembrance, were annually bled, and the change in respect to this and strong dosing is not merely a temporary revolution in medical practice, but is due quite as much to a real and recognized change in our physical organization. In some respects we may not be the better off, and there is certainly danger for ourselves and our descendants unless some limit is set to the excessive nervous and mental activity which is so general and almost unavoidable. But in regard to sexual impulses, while the change has brought relief in one way, it has imposed responsibilities not before incurred. Formerly lust was born of the *blood*; the very robustness of health was a temptation; the flesh was mighty and the spirit was weak; and the remedies were corporal and violent, like the disease. We may even charitably admit that there were some cases in which only blood-letting could, for a season, stay the raging fires of bodily passion. But it is not so now. Our foes are still of our own household, but they are the eyes, the ears, the brain, the thoughts, the imagination, all those finer organs and subtler processes which our conditions of life stimulate into highest activity; and *these we can control to an extent impossible in the other case*. We may avert the eyes from the indelicate, and close the ears to the obscene. We may will that the brain shall invent labor-saving machines, and solve problems in science, in place of scheming how innocence shall be entrapped and lust be

gratified. Our imagination may be encouraged to aid our efforts toward the good and the pure, rather than the evil and the impure.

“And while, no doubt, there are greater dangers from perversion of these faculties, and from the widespread dissemination of evil books and pictures and filthy newspapers, yet, as already said, these are influences from which we can flee, and to which there is no excuse for our yielding, not even the excuse of our forefathers, for it no longer exists with us.”

With a knowledge of this subject as already presented, it must be inculcated, and we wish to emphasize it, that treatment is moral and mental rather than medicinal; moral in elevating the afflicted above sensuality, mental in diverting the evil thoughts into other channels, and medicinal only in so far as is necessary to repair injuries already inflicted and diminish local congestion, while the other more important factors of relief are being strengthened.

In the light of such truth, how can a doctor of medicine be so thoughtless or so ignorant as to advise cohabitation with the courtesan; or by what process of reasoning can he logically conclude to counsel such a course, freighted as it is with inevitable moral defilement and with almost as certain syphilitic pestilence; a double-headed cancer that devours both body and soul. Thirty years ago the *Quarterly Review* published on this subject the following: “Its peculiarity and heinousness consist in its divorcing from all feelings of love, that which was meant by nature, as the last and intensest expression of passionate love; in its putting asunder that which God has joined; in its reducing the deepest gratification of unreserved affection to a mere momentary and brutal indulgence; in its making that only one of our appetites which is redeemed from mere animality by the hallowing influence of the better and tenderer feelings with which nature has connected it, as animal as the rest. It is a voluntary exchange of the passionate love of a spiritual and intellectual being for the hunger and thirst of the beast. It is a profanation of that which the higher organization of man enables him to elevate and refine. It is the introduction of filth into the pure sanctuary of

the affections. We have said that fornication reduces the most fervent expression of deep and devoted human love to a mere animal gratification. But it does more than this: It not only brings man down to a level with the brutes, but it has one feature which places him far, far below them. Sexual connection with them is a simple indulgence of a natural desire mutually felt; in the case of human prostitution, it is in many, probably in most instances, a brutal desire on the one side only, and a reluctant and loathing submission, purchased by money, on the other. Among cattle the sexes meet by common instinct and a common will; it is reserved for the human animal to treat the female as a mere victim to his lust."

This is resorted to from various motives. With many there is no opportunity for the natural gratification of their appetite; some are deterred from such gratification by the fear of discovery, regard for character, or a dread of disease; others there are whose consciences revolt at the idea of licentious intercourse, who yet addict themselves to this practice with the idea that there is in it less of criminality. It is to be apprehended, however, that its commencement can usually be traced to a period of life when no such causes have been in operation. It is begun from imitation, and taught by example, long before the thoughts are likely to have been exercised with regard either to its dangers or its criminality. The prevalence of this vice among boys seems to be connected with the great amount of illicit indulgence among young men. It prepares the way, it excites the appetite, it debauches the imagination. There is little doubt that it is often, if not commonly, begun at a period of life when the natural appetite does not, and should not exist. It is solicited—prematurely developed—it is almost created. On every account, then, this practice in the young demands especial notice. It is the great corrupter of the morals of our youth, as well as a frequent destroyer of their health and constitution. Could it be arrested, the task of preventing the more open form of licentiousness would be comparatively easy; for it creates and establishes, at a very early age, a strong physical tendency, an animal want of the most imperious nature, which, like

the longing of the intemperate man, it is almost beyond human power to overcome. The brute impulse becomes a habit of nearly irresistible force before the reason is instructed as to its injurious influence on the health, or the conscience awakened as to its true character as a sin.—(Ware.)

MENTAL SYMPTOMS. Patients affected with spermatorrhœa generally become languid, effeminate, pusillanimous. The power of motion is very much weakened; volition is readily excited, but does not last; there is a lack of firmness; the patient has the best intentions, but is unable to carry them out. In the more advanced stages of the disease the power of motion is partially, if not entirely, destroyed. The patients become diffident, irascible, sensitive, capricious. The least untoward event excites their anger, but grave insults do not seem to disturb them. Toward the female such patients are cold. They avoid the society of females and scarcely dare look them in the face. They prefer solitude, are sad, low-spirited, melancholy; they like to indulge in glowing thoughts; they are averse to any kind of work; they loathe life, and often think of killing themselves, nevertheless they are constantly desirous of recovering their health: they are ever thinking of their condition; they observe the urine and stool, watch their indigestion, and all the other functions; they show an indifference to every thing, neglect their business, and are tormented with the thought that they have lost their virile powers. Depression of spirits and hope, joy and sadness alternate in quick succession, accordingly as the involuntary losses of semen occur more or less rapidly, or according as the patients are impressed with the idea of either being better or worse. The memory is frequently impaired, and in persons endowed with higher intellectual powers the flight of idea is considerably embarrassed, the imagination loses its vivacity, and the acute and discriminating powers of the reasoning faculty are weakened. These symptoms, although they excite legitimate suspicions of the existence of the disease are, however, not sufficient to remove all doubt in reference to it. A similar degree of uncertainty attaches to the

PHYSICAL SYMPTOMS. The countenance is generally pale, eyes dull and leaden, with pimples upon the forehead or cheeks or both. These continue to spread, appearing in regular order upon the nose, the chin, the chest, back, arms, and eventually upon the buttocks, thighs and whole surface. The perspiration is profuse, and is particularly noticeable in the palm of the hand, which has a cold, damp, clammy feeling. The crown of the head is hot, and the hair falls out. The throat is dry, sore sometimes, and voice husky, the first words spoken being indistinct and uttered with difficulty. The muscles are small and flabby and the body emaciated, with a tendency to become round-shouldered. In the male the generative organs diminish in size. The gait is inelastic, slovenly, mopeish. There is an increasing lack of care and cleanliness about the dress and person. Company and companionship are avoided: seclusion is more agreeable. In society the deportment is shy, bashful and awkward. They are easily confused, and studiously avoid looking into the eyes of the person addressing them.

When the abuse is first practiced, but few of the mental and physical symptoms will be discovered. As the habit becomes more fixed, the irregularities first noticed will be more manifest, and distinct, and others will come to the light. With the lapse of time the majority are brought into existence and will be confessed by the contrite.

As we have before indicated, the effects of this unfortunate habit is depressing not only to the nervous system but particularly to the mental faculties. It is this hypochondriacal condition that the quack by his pseudo-medical works means to enhance. Aberrations of function never so slight, that last but a day, and perfectly normal processes having, in many instances, no connection with the disease, are described as the beginning of a train of symptoms horrible to contemplate; terminating, as their sophistry would imply, in suicide or insanity. Arguing, and not without some foundation in fact, that the majority are not guiltless respecting early indiscretions, they foretell "early decline," "loss of manhood," "marriage disability."

but how rarely do we meet such results! Is it to be wondered at that when they fall into the hands of these vultures that an effort is made to increase the alarm and that upon the examination of the urine by the microscope (of the use of which they know little or nothing) they inform the victim that he is rapidly becoming imbecile, or, grasping the testes with some force, they venture the opinion that the parts are withering away?

Their circulars and pamphlets usually comment upon the intricate processes necessary to elaborate the spermatozoa and their value in the economy (they simulate the learned), but imply that all shreds and flakes found in the urine are of this character. To the medical student, such a fallacy is obvious. The urine of all healthy persons contains mucus which is increased in quantity by slight catarrh of the bladder or water passages, caused by some local irritation. Upon standing for some time in a glass, this will be observed to collect just above the bottom, in a thin white cloud. When in considerable quantity, it follows the urine at the termination of micturation. It is visible, has a whitish milky appearance and is sometimes thick and ropy. To the sediments also, the attention is specially directed. But these can easily be tested by means both simple and always at hand. If of a dark reddish color, sometimes adhering to the vessel and staining it, they are what are called urates, products of the waste of the nitrogenous elements of the body. This follows severe muscular exercise or labor and diseases which destroy this tissue. Upon the application of heat they entirely disappear. If the urine contains the phosphates, the application of heat will precipitate it, or dropping in a very little nitric acid, they are dissolved and disappear. The urine may appear clear and yet if treated with heat and a little nitric acid it will exhibit a thickish milky substance which is albumen, resembling the white of an egg. The thickish mucus that appears at the mouth of the urethra upon erection is misrepresented as being vital fluid. This is the secretion of the prostate gland and is discharged upon excitement, the same as the saliva of the mouth upon seeing a person tear to pieces a juicy and luscious peach, or other pa-

latable relish. It is to be noticed that none of these substances found in the urine are diagnostic of spermatorrhœa. Nothing is certain but the presence of spermatozoa, and being but the one six-hundredth of an inch in length can only be seen by the aid of a microscope. Even then it requires an experienced eye to recognize the lifeless spermatozoa, for other shreds and sometimes even a fibre of cotton which may have become detached in cleaning the vessel or the object glass of the instrument may be mistaken by the inexperienced.

We do not wish to detract from the serious character of a genuine case of spermatorrhœa, but rather to allay the fears of that class of morbidly sensitive and suspicious minds which are fed to repletion by the spoken and printed words of these swindlers. At times it is a task to distinguish the real from the false disease, and both sufferers are alike entitled to our greatest sympathy and best counsel. It is the province of the physician to doctor to the mind diseased as well as the ailments of the body. We have never met so accurate a description of the mental anguish of one of this class as that of a clergyman suffering from emissions, and written by himself to Dr. Ingersoll and printed in his work :

“The winter of 1864 witnessed great distress in my mind over the involuntary act by which I lost the seminal fluid. I no more yielded to wilfully excite my sexual feelings, but commenced a fight for freedom and life which lasted for eight years. From advertisements which fell in my way, I read statements to the effect that the habit of self-abuse, producing certain symptoms which were described, and which I thought I saw in myself, would result in loss of health, in idiocy, or insanity. I never applied for help to any of these advertisers, nor took any drug of any kind for my cure. It seemed a shame for me, a Christian, to have such feelings, yet I prayed to God without ceasing, and trusted in him with all my heart. Convinced that involuntary action of any sort was not guilty, I held fast the profession of my faith without wavering, and finding my intentions pure toward God and men, I suffered on in faith.

"The struggle went on, a struggle to overcome and crush out of me what seemed the remains of the carnal nature. Day and night the one thought was ever present, and my prayers centered on this longed-for deliverance. I set apart days of fasting and prayer, and wept bitter tears of sorrow at the desolation which seemed to be coming upon me. I plead with God that he had called me to the Gospel ministry, that I longed to enter it for his honor and human salvation only, that it must be a triumph against Christ's kingdom if Satan ruined my body and mind. All the while I was achieving unusual success in study." (Note that!) "Sometimes I would get a great uplifting, and for two or three weeks would not have a seminal emission. Then, just as I thought deliverance had come, again I would be put to shame. Strange that never in all these years did I think of my sexual powers as having any such relation to the atonement as I accorded to the powers of my mind; strange that I never asked Christ to *save* them but only to *destroy* them.

"During this time, as my powers of mind and spirit grew, my sexual feeling asserted itself stronger and stronger. Yet it was never nourished by indulgence of any sort. I never told impure stories, nor would I listen to or tolerate in my presence any reference to the powers or functions of sex, nor anything which I regarded as unclean. All this time I was experiencing the states and conditions of inward peace, growth, and joy which distinguished me among my fellow believers as a happy even-tempered Christian. I never had the blues, never despaired." (Remarkable!)

"But the struggle was fearful; the night long. And attending these efforts were frequent failures, which so dishearten the struggling one, that opportunities are allowed to pass unimproved that are full of results, if only made the most of as they fly.

"The society of the best women I enjoyed very much indeed, but was not often in company, for after such association I felt a sensible weariness of brain, as if it were sore, from its strong action in self-control. Yet there was not the least desire to violate their chastity; from this I was wholly saved: but I felt that association with them

ought to be entirely independent of thoughts of sex or bodily emotions of sexual feeling, an association of mind and heart wholly independent of body and sexual differences.

"After eight years of such struggles, I felt that a crisis had come in my life. At this juncture I communicated with an eminent physician, asking him if there was any help for me. He told me that my trouble, sexually, arose from my brain, which was over full of blood. The seminal emissions were the work of Nature to relieve the pressure on my brain, and unless I had them, I might have had apoplexy. The nerves of the back brain, governing the sexual functions, being stimulated to undue activity by the presence of too much blood, must have rest, and as all mental work induced the flow of blood to the brain, I must stop studying and preaching until the harmony of the circulation could be restored: then my cold feet and legs would become warm, and my hot head would lose its excessive heat.

"With him I remained seven months, experiencing many kindnesses and some benefit, but my emissions still continued at intervals. I was told by the associate physician that when my digestion was so improved that I was able to make strength faster than I lost it by the seminal emissions, then I would not be weakened by them and would be practically well." Subsequently the author gave him the following information and instruction: "All your life you have been sorely grieved and well nigh angry with yourself that you were a man. Instead of having your whole body full of light, you have reckoned the sexual part of it dark, have had a horror of the same, have hidden it away from your prayers, consecrations and thoughts. All else in you, the power to think and reason, the power to love and trust, all other of your physical powers you have specifically offered to Christ and devoted to holy uses. But the sexual power you have left outside and battled with. You give thanks when you have spiritual desires and pray that they may be satisfied in God; for desires after knowledge also, and give praise for all good thoughts; so also when you have a good appetite for food you thank God and

pray for the government and satisfaction of that appetite. Now when you have sexual feeling and sexual desire, do the same. Commit all to Christ for his government. Praise him for the gift and leave all subject to His control. Do not fear that you will become lustful and ungovernable. What Christ governs is not ungoverned. Because conscious of your muscular power and rejoicing in your strength, you do not feel desirous of beating your neighbor—nor can you, if governed by Christ's law of love, 'for love worketh no ill to his neighbor.' Neither when money, not your own, is within your grasp, will you have any disposition to steal it,—though you value and prize money as a means of power, usefulness, and gratification—because the law of love says, 'Thou shalt not steal.' Again, you are conscious of sexual power, sensible of the desires associated with a healthy sexual nature. While rejoicing in it, you are in no danger of dishonoring yourself or another, provided you put it with all the other desires which Christ controls and trust to His care. You have intense desires after knowledge, and often feel the spring of the powerful force seeking to know. For this you give thanks, yet because you value and love this power, are you any the more in danger of seeking knowledge of evil, the ways of evil men, the society of impure minds? By no means. The trouble with people is that they put all the rest of the powers into one class—the salvable class, and put sex by itself as essentially different, unholy and unsalvable. He who made the body, no doubt controls all its involuntary conditions." The clergyman then continues his narrative: "My emissions did not cease, but I felt well. My old habits of thought did not at once give full place to my new convictions, but yielded steadily to the renewing power of Christ. Now my mind was easy. The dread of insanity which many times follows the continuous strain of mind attendant upon such a conflict as I had passed through, was wholly removed. A sense of perfect security in Christ filled my mind, and as I am writing not only past but present experience, I may say fills my mind continually."

We wish to make a few critical comments. He was "convinced

that involuntary action of any sort was not guilty," yet this conviction was not strong enough to stamp out the poison imbued by the "advertisements which fell in his way." The emissions were natural, as we have described in the previous essay. If not, could he have "achieved unusual success in study?" The "upliftings" would have been of longer duration, if he had taken the necessary steps to secure it. The depression, as it was, was more visionary than real. The instructions of the "eminent physician," if not correct, appear philosophical. Still "the emissions continued at intervals," for "seven months." Mental labor without physical exercise, by enervation of the nervous system certainly predisposes to emissions. He concludes; "*my emissions did not cease, but I felt well.*" "Now my mind was easy" and "a sense of perfect security fills it continually." In short, the truth is, he *never had spermatorrhœa*. But he thought he had it, and as the case is similar to thousands of others, we have introduced it to show that, when ill-advised, a spectre may haunt the most intelligent for "eight long years." The transition from one state of mind to the other, however, was gradual, not precipitate. This mental and nervous depression of years' standing requires the best, most intelligent and tender care. An old adage runs: "We are men, and nothing that affects humanity should be a matter of indifference to us." Here is wide ground for sympathy. Neither commands nor ridicule will answer.

"Nothing surely can surpass the inhumanity, as well as the folly, with which patients of *this* class (sufferers from nervous diseases) are too frequently treated. We often act upon the ill-founded idea that such complaints are altogether dependent upon the power of the will; a notion which, in paradoxical extravagance, scarcely yields to the doctrine of a modern, though already obsolete writer on 'The Philosophy of Morals,' who asserted that no one need die, if with a sufficient energy he determined to live. To command or to advise a person laboring under nervous depression to be cheerful and alert, is no less idle and absurd than it would be to command or advise a person under the direct and most intense influence of the sun's rays, to

shiver with cold, or one who is 'wallowing in December's snows' to perspire from a sensation of excessive heat. The practice of laughing at or scolding a patient of this class is equally cruel and ineffectual. No one was ever laughed or scolded out of hypochondriasis. It is scarcely likely that we would elevate a person's spirits by insulting his understanding. The malady of the nerves is, in general, of too obstinate a nature to yield to a sarcasm or sneer. It would scarcely be more preposterous to think of dissipating a dropsy of the chest than a distemper of the mind by the force of ridicule or rebuke. The hypochondriac may feel, indeed, the edge of satire as keenly as he would that of a sword: but, although its point should penetrate his bosom, it would not be likely to let out from it any portion of that noxious matter by which it is so painfully oppressed. The external expression of his disorder may be checked by the coercive influence of shame or fear; but, in doing this, a similar kind of risk is incurred to what arises from the repelling of a cutaneous eruption, which, although it conceals the outward appearance, seldom fails still more firmly to establish the internal strength, to increase the danger, and to protract the continuance of the disease."—(Dr. Reid.)

Trusting the digression may be of interest and value to the reader, we will resume the subject.

"A knowledge of the extent," remarks Dr. Howe, "to which the habit of self-pollution prevails would astonish and shock many. The above remarks apply to all of our public schools, for I have become too well acquainted with the alarming extent to which it prevails, often in the most open manner; the extent of it is amazing, for it exists both among the teachers and students. There are cases recorded where servant women who had charge of little girls, deliberately taught them the habit of self-abuse in order that they might exhaust themselves and go quietly to sleep. This has happened in private houses as well as the alms-houses. Female factory operatives practice it to an alarming extent; even little girls abuse themselves. A lady said a little girl in her neighborhood had just died from its ef-

fects, and that the female operatives in a neighboring factory practiced it almost universally, as she learned from one of them. She named other factories in which it was hardly less prevalent. Little girls below their teens thus abuse themselves, and the practice is alarmingly extensive among the fairest portions of creation."

There is more liability to be deceived in girls than in boys, because neither parents nor members of the family, nor in fact the physicians are at liberty under the laws regulating the social relations of the sexes to exercise as frank, free, and full inspection and examination into all the causes that produce disease among females as they are among males.

A mother is always more familiar with her son than a father is with his daughter in the direction of any conditions that may grow out of their respective sexualities. Owing to this, masturbation is practiced with more unsuspectingness by girls than by boys, especially at or about the age of puberty. If at that period a girl shows any infirmity, feebleness, lack of vigor, or anything of that sort, the mother has all her attention directed toward the development of the menstrual function. She is afraid that the child who is getting to be a woman is likely to fail in the upspringing of this new activity and to have in consequence a sick turn. She proceeds to doctor her daughter, if doctoring is the order of the day, from the standpoint of preconception. In a large number of cases, what is supposed to be the derangement of the menstrual function consequent upon a girl's arrival at puberty, as shown in her illness or perhaps severe sickness, should be attributed to a habit of rousing up by artificial means her sexual organism to unnatural excitement, the reactionary effects of which are seen in her morbid states of body, and about which her parents and friends are so often alarmed. Let it be borne in mind, then, by parents whenever such particular, unnatural or unaccountable conditions of appetite show themselves as we have alluded to—in fact, when any very strange alimentative caprice is exhibited by a boy or girl for which there is not the most obviously plain interpretation at hand, the exposition of it is to be had only by

and through the acknowledgement of the fact that the party is to be classed among these unfortunates.

In girls and women the consequences of this vice differ somewhat from those in men. There is the excitement, but of course unattended with the loss of the spermatic fluid. The effect is noticed in the prostration of the nervous energy and in general debility. The glandular system suffers and the breasts are only partially developed. There is a tendency to become round shouldered, the upper part of the body pitching forward, while there is a sinking in of the abdomen. Eventually, as in the male, they become poor in flesh, bashful, disliking the company of others, particularly of the opposite sex. The face is pale, with dark circles under the eyes and the customary eruption upon the cheeks, chin or forehead.

The effects of bad habits are peculiarly exhausting upon constitutions tending to consumption or insanity. Marital excesses, it may be here remarked, have a similar influence and to an equally intensified degree. Several instances have come under our special notice where one of the parties in wedlock rapidly declined after its consummation. Dr. Smith of England, as long ago as 1862, upon inquiry into the numerous conditions affecting the constitution in one thousand consumptives declared that over 11 per cent. of the males had committed sexual excesses; over 18 per cent. had been addicted to masturbation and 22 per cent. had suffered from involuntary emissions. Where properly advised, the immediate danger passed, but we fear the prostrating results have never been completely obliterated. It is a fact worthy of especial attention that many diseases, particularly those affecting the blood and nervous system, can be traced to this as the sole cause, and the treatment of them will be unsuccessful by the physician who overlooks this, or the invalid who disregards it.

We occasionally are informed that marriage has been professionally advised and in some instances consummated. Such counsel is irrational and the ultimate results are extremely pitiful. Lallemand inquires: "What has the young girl, who is thus sacrificed to an

egotistical calculation, done, that she should be condemned to the existence that awaits her? Who has the right to regard her as a therapeutic agent, and to risk thus lightly her future prospects, her repose, and the happiness of the remainder of her life?" An additional stimulus is given the organs already diseased and exhaustion follows, until, as described by the same author, "little by little, the phenomena of excitement which precede the orgasm diminish and at last completely disappear; the emission then occurs without dreams, without erection, without pleasure and even without any particular sensation; in fact, the patients are not aware that emission has taken place except by the stains they observe on the linen when awake. At the same time the seminal fluid loses by degrees its consistence, its color, its smell, and resembles most closely mucus or prostatic fluid." The man is wrecked, and the woman, to say the least, mortified if not hopelessly disappointed. "It is precisely because marriage is the most sacred bond for individuals, as well as the most important for society, and because an iron law renders it indissoluble, that it is rational as well as moral not to contract it without the certainty that it will be perfect and complete."

TREATMENT.

The successful treatment of spermatorrhœa will depend, in a great measure, upon the adoption of means best fitted to the particular case and individual, the thoroughness with which these means are employed and the perseverance necessary until a cure is completed. In a general manner we will discuss these under four divisions, viz: mental, surgical, hygienic and medicinal.

MENTAL TREATMENT.—Be determined to get well. This will be difficult at first, but "practice will make perfect." As soon as self-abuse or excesses are stopped emissions will happen frequently, disclosing to the surprised invalid the weakened condition acquired by these organs. Bring the will, however, to bear in controlling and averting emissions by rousing at the first indication, either feigned or apparent. Be chaste in word and thought.

What impairs the mental and moral faculties still more than the loss of seminal fluid is a certain reveling in lascivious fancies, which is the more dangerous, the more secretly indulged in and the younger and feebler the persons addicted to such excesses. The higher functions of the soul are almost destroyed by them; all the purer and nobler thoughts are constantly superseded by the imagery of a libidinous imagination. This unnatural indulgence affects the sensorium, the spinal marrow, digestion and nutrition. By the time the patient is made aware of his error all these phenomena have made a more intense development. The effect of these silent transgressions is the more formidable the younger the culprit and the weaker his constitution and the desire to discontinue his evil practices. No abuse is fraught with more destructive consequences than this.

Carpenter, in his *Physiology*, gives unmistakable advice:—"The author would say to those of his young readers who urge the wants of nature as an excuse for the illicit gratification of the sexual passion, 'try the effects of close mental application to some of those ennobling pursuits to which your profession introduces you, in combination with vigorous bodily exercise before you assert that the appetite is unrestrainable, and act upon that assertion.' Nothing tends so much to increase the desire as the continual direction of the mind toward the objects of its gratification, especially under the favorable influence of sedentary habits, whilst nothing so effectually represses it as the determinate exercise of the mental faculties upon other subjects and the expenditure of nervous energy in other channels."

SURGICAL TREATMENT.—When the prepuce or foreskin is so lengthened as to hide from view almost completely the glans, or when it covers the glans so tightly that it is impossible to uncover by drawing it aside, or when this can only be accomplished with difficulty, circumcision is advisable. This is accomplished by drawing the superfluous skin well forward, holding it in a vise kept close to the glans and with one cut removing all beyond. The clamp is then removed and the edges held to each other by stitches until healing is

completed. In the case of constricted skin (phimosis), it is sometimes sufficient to clip the constricting bands in several places, which frees the foreskin at once. Before this is done the question of superfluous skin should be decided upon, for it is unnecessary in any case to perform both operations. A thin bladed knife is slipped between the two and then turned so that the cutting edge cuts against the constricting bands. The cut is not deep, and by the finger pressing from the outside against the edge of the knife, the operator can, by feeling, facilitate his work.

While the above removes extreme sensitiveness of the glans, it has no effect upon a similar condition which may exist in the urethra. This is best relieved by passing into the urethra once or twice a week a flexible catheter or a bougie having an olive-shaped tip. Some pain is usually experienced while the instrument presses upon the sensitive parts, which are located about six inches from the orifice. This disappears as the inflammation is removed and with it the frequency of emissions.

When possessed of an electrical machine, the above may be improved upon by using the steel sound. This is curved like the canal and is inflexible. It should, like all instruments, be well oiled before use and passed into place slowly and with the greatest care. When in place, an electrical current can be passed along the instrument, the positive pole being applied to the handle and the negative moved about in the region of the point. Its use for too long a period at one sitting is weakening.

When sufferers complain that, with the best intentions, they are not able to cease the pernicious habit, or that they find themselves in a semi-conscious and dreamy condition involuntarily performing the act, we know no better assistant than that afforded by such an irritation of the parts that manipulation will be impossible. This is effected by applying a camel's hair-brush wet in tincture of cantharides (Spanish-fly), upon different parts of the organ, allowing intervals of healthy skin between. The application may also be made by wetting small strips of cotton in the tincture and tying them on at intervals,

allowing them to remain until blistering begins. As these parts heal, the intervening parts should receive the same treatment. This course is applicable to both sexes, may be termed harmless, and gives the patient a good foundation for following some of the methods hereafter mentioned.

HYGIENIC TREATMENT.—This may be concisely stated to be the use of such means as will improve all the functions and tone up the system. First among these are exercise and diet, outdoor sports and gymnastic exercises when possible, and if not, such light labors as will employ the body and not tax the mind. A good plan for the sedentary is to exercise at least fifteen minutes morning and evening, with Indian clubs and dumb-bells. These can be had at most of the hardware stores in our large cities, or, if preferred, the clubs can be roughly made at home. The weight of a single club should not exceed six pounds. A neat and convenient apparatus, which meets every requirement, is the Parlor Gymnasium, which is explained on other pages. Long walks, running, and horseback riding, seem to be contra-indicated. In no case is exercise to be continued to fatigue. Many suppose that when exercise is advised, it must be violent or protracted. Excess is not only without salutary effect, but detrimental.

The diet should be plain and nutritious. Stimulants, which includes much meat, eggs especially, spices, malt and alcoholic liquors and tobacco in every form, are prohibited. The last meal of the day should be light and with but little fluid, in which are included juicy fruits and vegetables.

The bed coverings and clothing about the hips should be light. Feather beds, particularly, are overheating and stimulating to the pelvis and generative organs. Lie upon the sides but never upon the back. For those who are in the habit of sleeping upon the back considerable assistance will be rendered by tying a wooden ball in a long strip of cotton, which should be fastened about the waist sufficiently tight to prevent slipping, having the ball pressing upon the spine, or a spool or a stiff brush may be tied in a similar manner

with a cord. While this prevents an injurious position in bed, it necessitates rising to a sitting position in order to turn from side to side; besides, such adjuncts are likely to cause more or less restlessness when first adopted.

The bladder should be emptied before retiring, and again in the night, if discovered full. At such a time do not wait but arise at once. The bowels should be kept soluble and evacuated daily.

If restless towards morning, rise at once, take a cold bath, and occupy the mind by reading. *A second sleep is dangerous.* Most emissions occur early in the morning.

Bathe the body, including the genitals, daily; if in the morning, with cold water, if at night, with warm. Dr. Jacobi, in a monograph, remarks: "The good habit of washing young children in cold water is not always unattended with a certain degree of danger. There are some that are unduly excited by it at bed-time. In adults I have frequently observed that, while cold washing of the whole body—genitals included—would be attended with good results in the morning, it, or the cold shower-bath, just before going to bed, would lead to excitement and nocturnal emissions;" and adds: "This observation has led me to pay some attention to the possible ill-effect of the same dietetic treatment in the evening, in the cases of such children who were known as, or suspected of, being addicted to the morbid habit."

MEDICAL TREATMENT.—When there is a tired, aching feeling in the testes, or varicocele, or the scrotum is lax, particularly in the summer, a suspensory bandage should be worn. This affords much comfort to the wearer.

To insure protracted sleep, bromide of sodium may be taken at bedtime. We prefer a pill made of

R. —Lupulin,	}		one grain of each.	Mix.
Camphor,				
Or,				
R. —Lupulin,		two grains,		
Felsemin,		one-fourth grain.	Mix.	

These are slightly narcotic and anaphorodisiac, dissolve slowly, and have a protracted effect. They leave no deleterious effects upon the system. For a corroborand effect upon the digestive organs, take if necessary some of the bitter principles, such as a combination of hydrastin and pepsin. To improve the nervous and muscular powers we recommend the use of

R.—Phosphorus, ... one grain,
 Extract of Nux Vomica, ... twenty-five grains.

Add sufficient fat and make one hundred pills, One to be taken immediately after breakfast and dinner. These should be made by a pharmacist, as they require great care in manipulation.

Only cases of long standing require medication, and then only for a sufficient length of time to bring the system to such a condition that it may, of its own accord, continue recuperative action without it.

IMPOTENCE.

When abuse, either from excesses or masturbation, is continued beyond the point above indicated, we have impotence. From this to dementia is but a few steps. Lallemand furnishes the following definition: "Impotence consists in want of power in connection, not once, but habitually; not only with courtesans, but with those whom we most love; not under unfavorable circumstances, but during long periods of time, as five, fifteen, or twenty years, when married to lovely and handsome women whose devotion to their husbands has never been questioned." The fact is evident that bad habits do not injure in the demand upon the elaborated and vital secretion known as semen, but directly by the spasmodic excitement and exhaustion of the nervous system. Women do not secrete semen, and yet those of this class suffer to the same extent as men. In treating this subject we will not mention malformation, the pressure of trusses used in relieving hernia, the enlargement of the veins of the cord, stricture, and corpulency, that are physical causes of this condition.

It is often asked: How may I know when I am overreaching moderation? We use the language of the last named author. "When connection is followed by a joyous feeling as well as fresh vigor, when the head feels more free and easy, the body more elastic and lighter; when a greater impetus to exercise or intellectual labor arises and the genital organs evince an increase of vigor and activity, we may infer that an imperious want has been satisfied within the limits necessary for health. The happy influence which all the organs experience is similar to that which follows the accomplishment of every function necessary to the economy;" or, putting it in other words, Mr. Acton says: "When coitus is succeeded by languor, depression of spirits and malaise, the individual may consider that he has committed an excess."

The disease is one of the nervous and muscular systems and is especially sad and deplorable in either sex. The influence of the mind is an important factor in producing a condition closely resembling the true disease; but the difference is soon discovered, as it is but temporary. Undivided and prolonged attention to intellectual matters and protracted muscular exertion may develop temporary impotence. So, also in the young, the consciousness of abuse, unfounded fears that the act will be unsatisfactory, sudden alarm or any noise or accident that diverts the attention, all have a similar effect. Sexual apathy is in many cases of this nature, and the party of either sex finds more pleasure in the practice of the morbid habit continued from youth.

TREATMENT.

Any treatment that will insure restoration must be unstimulating. The use of those remedies which increase the sexual appetite are but temporary in character and effect, and are followed by disaster, leaving the organs worse than before. A wise and judicious treatment will consist in first removing the physical causes, if any exist, the application of such surgical means as are necessary, and the continued use of hygienic medical means. Most of the treatment that we have noticed as applicable to spermatorrhoea is valuable in impotence.

Especially is this the case in the use of the phosphorus and nux pills, which are roborant both to the muscular and nervous systems.

INFLAMED TESTICLE, SWELLED TESTICLE.—*Orchitis*.

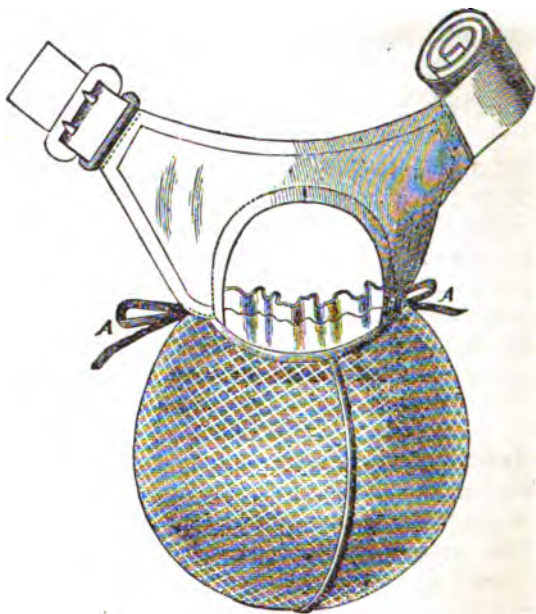
The testicle is likely to take on inflammation from specific disease, from injury or pressure, from metastasis of mumps, and from colds. It increases in size rapidly, the pain is severe, and walking is hindered if not rendered impossible. Efforts are continually made to support the parts. As the inflammation increases, pains shoot up the groin into the abdomen and sometimes down the thighs; fever, nausea, and vomiting set in. If not promptly relieved, suppuration may occur or permanent enlargement.

TREATMENT.

The sufferer must go to bed. If there is fever, give a spirit-vapor bath. Pack the testicles with cloths wet with a warm and strong solution of muriate of ammonia. A better remedy is a compress wet with tincture of belladonna; this will remove the inflammation in a single day. The testicles must be brought well up upon the abdomen and there supported either by a sling or by strips of adhesive plaster which secure immobility. If necessary, shave off the hair. It will be well to wear for some time after recovery a suspensory bandage; especially if the disorder happens in the summer time.

VARICOCELE

Is an enlarged condition of the veins of the spermatic cord and scrotum. The left is the one more commonly varicosed. The swelling begins from below and extends upward. The scrotum becomes weighty, pains shoot along the course of the cord and walking is attended with much distress. The veins give to the touch the feeling of a twisted or knotty cord.



**SCROTAL SUPPORTER, STRONG AND DURABLE.
TREATMENT.**

A ready means of relief is the use of the suspensory bandage. If the testicle is enlarged or the parts are swollen, better use a scrotal supporter. The radical cure is effected by surgical operation. The veins are carefully separated from the arteries and cord and tied with carbolized catgut or severed at once and allowed to bleed, controlling the hemorrhage by pressure. Within three days the wound has healed and in a week the person can resume business.



**SUSPENSORY BANDAGE, LIGHTER
AND FOR SUMMER WEAR.**

SARCOCELE is a fleshy tumor of the testicle. It may be benign or malignant. The cancerous disease is fortunately rare. In this case the growth is hard, heavy, increases in size, becomes more and more painful, finally opens in ulcers and so involves the whole system that the person has the characteristic look of the cancerous; a pale and anxious countenance. As soon as its malignant character is suspected, castration should be performed.

CLAP.—*Blenorrhœa, Gonorrhœa, Bubo.*

This is an infectious disease, consisting of a catarrh of the urethra (the discharge pipe of the urine) in either sex attending an inflammation of the mucous membrane lining the canal. The discharge through venereal excitement of slight transparent exudations from the meatus or mouth is the only instance where excessive mucus is normal or natural. All else is pathological or diseased. It affects also the prepuce in the male and the vagina in the female. In the majority of cases it follows connection with one so affected, but not invariably. The exceptions occur when the urethra is uncommonly sensitive and arise from mechanical injuries from the use of the catheter, from intercourse during the menstrual period and from acrid leucorrhœal discharges. Of course, we also except the rare instances where the poison is accidentally received by the use of public urinals or closet seats. The prominent feature of the disease is a discharge from the privates of an irritating matter, a poisonous pus. This specific matter or other poison finds lodgment upon the mouth of the urethra or the folds of the mucous membrane and sets up an irritation. If, in from two to seven days after exposure, the inflammatory action has so far progressed that a discharge of catarrhal mucus commences, it is a certain sign of inoculation.

The potency of the poison is very great, similar to vaccine matter, to which it is closely allied, the least particle of which reaching the true skin produces vaccination.

In a public hospital in Cincinnati, although great care was taken, all the convalescent patients of a single ward were attacked with the

disease by the introduction of a single party who endeavored to conceal his affection. This contagion came from using the same urinal, and the guilty party was only detected by searching his wardrobe in his absence.

The virulency of the non-specific virus is sometimes surprising. Its effects are commonly mild in character, as far as the physical system is concerned, but if the chastity or fidelity of the partner in wedlock is questioned, there may be a storm in the social atmosphere. The position of passing judgment in such cases is a delicate and responsible one for the physician, but if he be intelligent and the facts warrant, he can dispel the clouds of doubt and restore confidence and harmony. A knowledge of the above-noted conditions which provoke this form of gonorrhœa will satisfactorily explain its appearance, and we trust, lead to avoiding them.

This discharge though non-specific is contagious—may be transmitted to the opposite sex. Prof. F. N. Otis says: "I have seen several cases which go to prove that a contagious secretion from the mucous membrane may be present as the result of simple causes, wholly independent of contagion." A stricture of the canal, of long standing that has not been perfectly cured may at the time of marriage produce this catarrh in the male and inflammation of the vagina in the female. We have seen leucorrhœa in a child five or six years of age, which was produced by the presence of pinworms in the bowel. These were entirely removed and yet the discharge continued. This poison was carried to the nose, mouth, and eventually the eyes, causing that terrible disease gonorrhœal ophthalmia or inflammation of the eyes. In spite of the greatest caution commanded and the exhibition of the extremest care in manipulations, the mother after caring for the child accidentally used the same towel and was herself attacked.

Symptoms :—The disturbance is local and general and is graded very much by the nature of the cause. From mechanical injuries or leucorrhœal discharge, the inflammation may be slight and but a

limited quantity of clear or slimy mucus escape. When the cause is *specific* feverishness, thirst, coated tongue and constipation may follow; a burning sensation and afterward severe scalding pains on passing urine, swelling of the glans or head of the member and painful spots in each groin. This local difficulty in the groin (*bubo*) is due to the fact of the absorbing glands taking up the poison and suffering consequent irritation, and it may be, inflammation. These lumps should not be handled; we have seen them from imprudent manipulation increase in size in twenty-four hours from that of a pea to that of a goose egg. If the inflammation continues to spread, there are frequent and painful erections and continual desire to micturate and defecate. The prostate gland may inflame, causing prostatitis, or the testicle causing orchitis, and even the kidneys may become involved. Stricture is a not uncommon sequel. In the female it may spread to the bladder and womb.

The indications are to relieve the inflammation which is local as soon as possible. In case of constitutional symptoms the treatment advised for syphilis should be adopted.

TREATMENT.

In mild cases we prescribe injections of warm milk into the urethra after each passage of urine. In general, we have prescribed for years, a solution of

R.—Sulphate of Zinc,		two drams,
Fluid extract of Golden Seal,		one dram,
Glycerine,		two ounces,
Water,		two ounces.

Mix.

Add to a teaspoonful of the mixture a teaspoonful of hot water and inject three times a day after urinating. The urethra should be closed above by pressure of the finger and thumb to prevent the medicine passing the entire length of the canal. This precaution is necessary to avoid the lodgment of some of the virus upon the healthy surface. From the difficulty experienced in carrying out this plan

and from a conviction that the injections amount to but little more than temporary baths, these means have been superseded by the use of bougies. Here the remedy remains in contact with the evil all the time it takes to dissolve, about two hours, and as much longer as it is retained. The convenience in carrying, the ease in introduction and the efficiency in service, recommend them. The imported article is known as *Porte-remede Reynal*. A very soluble gummy composite is the basis and they are medicated with opium, belladonna, sulphate of zinc or chloride of zinc in different proportions to meet various cases, being soothing, tonic, astringent or caustic. One is introduced at night upon retiring; sometimes two applications are necessary, one at night and one in the morning. The bougie is dipped in water and immediately withdrawn, which renders it oily enough for easy and painless introduction.

GLEET.—This follows improperly treated or neglected gonorrhœa. It is a continuous discharge of colorless slimy mucus, small in quantity and without pain or scalding. It is obstinate in treatment, and may be the forerunner or concomitant of stricture. *Treatment* by the astringent or caustic bougies Reynal, meets every indication and almost uniformly results in speedy recovery.

STRICTURE OF THE URETHRA.

This term is applied to a lessening in the size or calibre of this tube; hence we have interference with the discharge of urine, which appears in diminished quantity, is expelled with difficulty and in a forked or spiral stream, sometimes only by dribbling or in drops. This may be permanent or transient. The former is due to a change in structure,—the latter may be only a nervous affection. We have simply to do with the permanent disorder. From inflammation in the tube, usually gonorrhœal, or from accident, there is a thickening of its walls and the presence of lymph, which hardens as the inflammation recedes, forming a continued pressure at the point of partial

closure. The stricture does not occur in a continuous line along the canal, but at points, leaving the healthy or dilated canal between.

Apart from the symptoms, the surgeon requires the additional knowledge furnished by local examination. An elastic catheter, with a pear or olive-shaped point, is slowly passed through the tube. At points of stricture its progress is retarded and sometimes entirely stopped. The greatest care must be observed in this exploration, for if any force is used the diseased part may give way under the pressure and the instrument lose the canal entirely. The invariable rule should be, use no force whatever. A smaller sized tip will often be successful. Sometimes the opening will be a little out of the direct line, when a slight change in the hand of the manipulator will permit its further passage. There are cases in which the line is so tortuous that it is simply impossible to reach the bladder.

TREATMENT.

The treatment of spasmodic stricture is simple and sometimes requires nothing but diversion of the mind. A dash of water in the face will be followed with a copious stream. The permanent is often aggravated by spasms. Hot fomentations, the use of gelsemium or lobelia, the steam bath, being alone, the noise of running water, separately or altogether, overcome the spasmodic form.

In treating permanent stricture caustics should be avoided, for invariably their use aggravates and even produces the disease. The most desirable method of cure is dilatation. A steel sound, small in size, may be introduced and allowed to remain a few minutes. This operation may be repeated two or three times daily. The instrument can then be laid aside and a larger one employed. In every case a small amount of sweet-oil should be injected before the instrument is introduced. Instruments are employed which, arriving at the stricture, can be enlarged by force, tearing the fibres apart. Inflammation sometimes follows, and, in every instance, the sound must be used to obtain lasting benefit.

Another method more speedy in its application and taking less time in healing, is that of incision; but this requires the surgeon's

help. A pointed rod, but having an edge, is introduced from the surface at right angles with a sound in the canal directly to the point of stricture. In parallel lines the constricting bands are severed. The knife can then be removed. The blade and shaft are so small that the wound upon the surface has the appearance of a puncture with a large needle. The instrument can then be used on the side opposite to that previously engaged.

When the stricture is seated far back in the tube, close to the prostate gland, the operation is similar to that for stone in the bladder, free incision is made through the perineum.

CIRCUMCISION.

This operation is confined in this country almost wholly to the male infants of Israelites. The custom is of ancient origin and is considered as, or associated with, religious ceremony. Whether the original object of this mutilation was cleanliness or exemption from specific disease, which the circumcised possess to a remarkable extent, we are unprepared to state. Many nations have practiced it and millions of people at the present day adopt the custom. A description of this simple operation may be of interest and perhaps of service. All that is required is a sharp knife, a guard and narrow piece of lint for a dressing. The guard may be any device that will firmly hold several thicknesses of skin, and at the same time present on one side an even surface to allow the flat side of a knife-blade to slip along without catching. The instrument consists of two flat pieces



CIRCUMCISION FORCEPS.

of metal, ivory or wood, fastened with a hinge or dowels. The prepuce or foreskin is seized by the thumb and forefinger and drawn forward, the guard or clamp is closed over the extended skin near

them and pushed back until it meets the glans. The guard is held securely and the knife passing along and close to the outside, with one cut severs the free part of the foreskin. Upon removing the clamp the skin retracts behind the glans. The inner skin next to the glans sometimes needs additional trimming. The bleeding is slight and a lint dressing completes the operation.

Pox.—*Syphilis*.

This malady has its origin in specific contamination. It is always described as passing through three stages, termed respectively, primary, secondary, and tertiary. These divisions are arbitrary and simply save the repetition of words. The poisonous matter is received upon a mucous surface or some part of the skin that is abraded. A sore presently appears upon the point of inoculation and in the course of three or four weeks we have a well developed *chancre*. This is an open running sore, with a livid and highly inflamed base of cup-shape and with borders hard, raised and of irregular outline. The matter discharged is poisonous and will generate the disease in others. Coming upon the eye from the use of a towel employed by the afflicted, a very troublesome disease is generated, resulting not unfrequently in loss of sight.

The secondary symptoms seldom develop before the lapse of two or three months. Their character is chiefly constitutional, demonstrating that the blood is infected. Eruptions appear upon the chest and abdomen, the arms and back. Suppurating sores locate about the corners of the mouth, the mucous surfaces of the tongue, cheeks, throat, the nose, vulva, etc. The glands in the neck swell and can be felt through the skin, particularly at the sides below and beyond the ears. The throat is sore, the voice husky, in time the hair falls out, the eyes discover internal inflammation, and the nails have sores at their roots. The poison appears stronger than ever and is easily transmitted by contact.

The tertiary symptoms are the secondary, more aggravated and

intensified, working steadily toward the destruction of the body. The soft palate becomes ulcerated, perforated, and sometimes entirely eaten away. In such a case the voice has a peculiar hollow sound, articulation is indistinct, and foods, particularly liquids, are occasionally returned by the nose. The tongue is sore, ulcerated in spots, and if the case has been treated with mercury, as usually happens, there is inflammation of the periosteum and disease of the bones, particularly the long bones, distress, persistent and loathsome diseases of the skin, loss of virility, abortion—if gestation occurs—and transmission of the disease in all its vigor, if offspring is born alive.

TREATMENT.

Our advice to any so unfortunate as to be afflicted with this dreadful malady is to consult at the earliest moment an experienced and conscientious physician. Shun, as you would the cobra, those harpies who screen their charlatany under the secrecy necessarily connected with the disease. Their "wonderful" remedies are all known to the profession, and you will get better results at the hands of the more skilful.

For the chancre we employ carbolic acid, dissolving one part in two or four of glycerine, and apply with a compress of soft lint. This is continued until the sore has a healthy appearance and the discharge ceases. The amount of acid is then reduced. We have found that washing, even with the softest sponge, prevents healing. Hence, when the inflammation subsides, it is better to treat with a spray by the Atomizer (see Catarrh). Mix for this purpose one part of carbolic acid with forty of water. Throw the stream upon it ten minutes at a time, three or four times a day. This is excellent treatment for the sores upon the lips, cheeks, tongue and palate. We have had good results from using the tincture of iron in a similar way. Always use with it the Queen's Root alterative, made in the following manner:

R.—Fluid Extract Queen's Root,	. . .	four ounces,
Fluid Extract Poke Root,	. . .	two ounces,
Fluid Extract Blue Flag,	. . .	two ounces,
Fluid Extract Mandrake,	. . .	one ounce,
Iodide of Potash,	. . .	two ounces,
Simple Syrup,	. . .	twenty ounces.
		Mix.

Take a teaspoonful three or four times a day. This purifies the blood and eradicates the poison.

If the bones are decaying, use with a syringe, or if superficial, with the Atomizer,

R.—Sulphate of Zinc,	. . .	two grains,
Chlorate of Potash,	. . .	eight grains,
Water,	. . .	one ounce.
		Mix.

In case of nervous exhaustion,

R.—Phosphorus,	. . .	one grain,
Nux Vomica,	. . .	twenty-five grains.
		Mix.

Make one hundred pills, and take one or two after each meal.

When the loss of flesh is considerable, appetite poor, etc., it may be best to employ the cod-liver oil compound recommended in consumption. This and electricity, are always prescribed in beginning the treatment of long standing cases.

There are many other points that might be noticed, but want of space forbids. Sufficient has been said, however, to direct the sufferer to a rational and successful medication.

CLASS IV. GENNETIC DISEASES.

ORDER II.—OF WOMAN.

LOVE.

For the physiological student, there is probably no better definition than that given by Carpenter:—"The instinct of reproduction, when once aroused, even though very obscurely felt, acts in man upon his mental faculties and moral feelings, and thus becomes the source, though almost unconsciously so to the individual, of the tendency to form that kind of attachment toward one of the opposite sex which is known as *love*. This tendency, except in men who have degraded themselves to the level of brutes, is not merely an appetite or emotion, since it is the result of the combined operations of the reason, the imagination, the moral feelings, and the physical desire. It is just in this connection of the psychical attachment with the more corporeal instinct that the difference between the sexual relations of man and those of the lower animal lies. In proportion as the human being makes the temporary gratification of the mere sexual appetite his chief object, and overlooks the happiness arising from mental and spiritual communion, which is not only purer but more permanent, and of which a renewal may be anticipated in another world, does he degrade himself to a level with the brutes that perish."

Parise says: "One grand purpose pervades the creation—to live and impart life. This last function ought to be considered the most important. If men will conform to the laws of nature—laws which,

moreover, are immutable and eternal—they must submit themselves to conditions of existence and of organization, and learn how to limit their desires within the spheres of their real wants. If they will do so, wisdom and health will bloom of themselves, and abide without effort; but all this is too often forgotten when the functions of generation are in question. This sublime gift of transmitting life—fatal prerogative, which man continually forfeits—at once the mainstay of morality, by means of family ties, and the powerful cause of depravity—the energetic spring of life and health—the ceaseless source of disease and infirmity—this faculty involves almost all that man can attain of earthly happiness, or misfortune, of earthly pleasure or of pain; and the tree of knowledge, of good and evil, is the symbol of it, as true as it is expressive. Thus, even love by its excesses hastens and abets the inevitable doom; for which, in the first instance, by the aid of passion, it had provided the victims.”

PUBERTY.

Dr. Carpenter thus describes the change from childhood to youth:

“The period of youth is distinguished by that advance in the evolution of the generative apparatus in both sexes, and by that acquirement of its power of functional activity, which constitutes the state of *puberty*. At this epoch a considerable change takes place in the bodily constitution: the sexual organs undergo a much increased development, various parts of the surfaces, especially the chin and the pûbes, become covered with hair; the larynx enlarges, and the voice becomes lower in pitch, as well as rougher and more powerful; and new feelings and desires are awakened in the mind.

To the use of the sexual organs for the continuance of his race, *Man* is prompted by a powerful instinctive desire, which he shares with the lower animals. This instinct, like the other propensities, is excited by sensations; and these may either originate in the sexual organs themselves or may be excited by the organs of special sense.”

CHASTITY.

This is only possible upon the basis of an equal standard of morality for men and women. If prostitution is necessary for men it is honorable for women. It is neither a necessity for men nor honorable for women. Children should be taught the true function of sex, and the sacred obligations which pertain to true marriage and parentage. Young men should be admonished that there is not for them, more than for their sisters, any proper season for "sowing wild oats." Older men should aspire to a higher type of manhood than that which worships at the shrine of undisciplined desire and ignoble passion. For women generally there should be enlarged and equal opportunities, especially industrial, educational and political, that vicious men may less readily take advantage of their helplessness and necessities. In this mission for the uplifting of humanity, parents, teachers, enlightened scientists, physicians and Christian ministers, one and all, should bear a part. Labor thus intelligently and conscientiously bestowed cannot fail of a beneficent fruition.—(Powell.)

WEDDING JOURNEYS.

Reform must be effected in this custom, and it is pleasing to note that some of our leading physicians have already taken the initiative step. Confined as it is at present to their own families, but little time will elapse before it is copied by their patrons and eventually introduced to and adopted by the public. The effects of such journeys are much more disastrous to the lady than to the gentleman. Her labors have been arduous for many weeks previous to the event and both the mental and physical systems have been taxed to the uttermost. She feels the deepest interest in the ceremony and its surroundings, the reception and its multitude of minutiae, particularly the table and *menu*, its tasty appearance and æsthetic effect. Even the fatigues of the wedding-day itself are so great as to call for prolonged rest and quiet. Besides the feelings are intensified and supersensitive and until this tension of the nervous system

is relaxed, the exhaustion consequent upon this over-stimulation relieved and the injuries repaired, neither party is in a condition to take a long journey, which is tiresome at the best.

OBJECTIONS TO MATERNITY CONSIDERED.

The leading objections which women raise against child-bearing are: children are luxuries the poor cannot afford, or an argument to that effect; that women must suffer intolerably while in this state and incur a great risk to life at parturition, and the least weighty, that something important is about to transpire and the pregnant state would seriously interfere with the pleasures and proprieties of the occasion.

In reply to these it may be said that the first is not proved by experience. It is well known that people with limited means have fed, clothed and educated large families and have turned out the better citizens for the effort. Quite frequently it is the case that the best men and women were once members of large families. A married woman who opposes having children on the ground that she cannot properly raise them, is a timid creature who needs words of assurance and encouragement.

The second excuse is one the physician knows best how to answer. He is ready to declare that in the majority of instances women go through parturition without extreme suffering or imminent peril. And those women who have borne the most children, raise the least objection to bearing more.

The third reason for not bearing children is not worthy of profound consideration. Most women can take a journey, entertain friends and execute most of the varied duties of life, even while in an advanced state of pregnancy. It is a foolish and injurious custom for women to withdraw from the activities of life as soon as pregnancy is known to exist. The sterile woman generally has not enough to do and time hangs heavily upon her hands; and she sighs for objects on which to lavish affection and attention. The happiest

women, as a whole, are those who in their declining days have grown-up children on whom they can lean and trust.

Fortunately for society, women are willing to undergo the discomforts of child-bearing. They look upon maternity as a condition incident to the nuptial state and regard offspring as a source of hope and happiness. The germ of the new being gets its origin in the female ovary and conception takes place in her womb; and when the masculine and feminine elements have fruitfully blended, an embryo or nascent being is "begotten" and it starts upon a career of evolution that results in adult proportions. Why should a woman so pervert her moral sense as to allow this, one of the chief purposes of her existence, to be thwarted? Will she not learn that there is something elevating and refining in the latter periods of gestation? Will she not appreciate that she cannot attain the height of her destiny without becoming a mother? Wifehood and maternity are the crowning graces of woman.

INCAPACITY REVIEWED.

Many women have their disqualifications for the marriage bed. Some have no control, others, from personal disrelish, a total absence of desire. Many, although an ungenerous world may doubt the truth hereof, have not the least idea of the difference of the sexes. There are ways of preparing females for what they will have to encounter at all periods of life, and no mother should fail to instruct her child as circumstances demand, of the expectancy of each succeeding era of her coming existence. It is not intended thereby to urge that females cannot be too early initiated into the mysteries of matrimonial ceremonies and consequences, but there is a time and an age when such intelligence should be conveyed to them, and by no means should they be allowed to form alliance without such knowledge. The reader, we repeat, may possibly express a doubt whether such an event ever did occur. He may be assured that many such have, and do still occur, and are productive of much distress. Nor is it intended that the physiology of reproduction should form a

part of the preliminary education of a boarding-school girl, but no woman ought to become a mother without knowing something of the appearance of conception. It is really astounding to see the very great ignorance of these matters entertained by women in general. It may be construed into a specimen of female modesty, but it eventually occasions many needless fears and anxieties. Such disqualifications, however, have little to do with

STERILITY OR BARRENNESS.

This may be defined as an inability to produce offspring. It is estimated that one in every eight of the English married ladies are sterile. This proportion increases in the cities and diminishes in the country. The most beautiful women, healthy in other respects, are among this unfortunate class. Many of these had acute suppression of the menses in early life or dysmenorrhœa or now suffer from it. In that kind of dysmenorrhœa, particularly where we have an inflammation of the neck of the womb and the discharge of tough albuminous or membranous shreds, it will continue as long as this continues. It is fortunate it does not happen every month; when cured, conception follows. Another mechanical cause is contraction of the canal of the neck. This can be cured by dilatation and conception follows in from twelve to eighteen months. Acid secretions in the vagina or neck as in leucorrhœa are causes of infecundity, acting chemically in destroying spermatozoa. The treatment of the leucorrhœa will remove this obstacle and its consequences. "When the characters are very different," says Ryan, "they cannot entertain a state of harmony, as in a frigid or ardent individual, until age or habit renders them more suited to each other; thus married persons have passed fifteen or twenty years without offspring, notwithstanding their most anxious desires. Abraham and Sarah, and Jacob and Rachel are examples mentioned in sacred writings. When there is antipathy, disgust, hatred or passion, conception seldom happens. Marc is of the opinion, that the moral causes of sterility in both

sexes are a fear to procreate, too vivid a desire to have children an antipathy or incompatibility of humor between the sexes, negligence or apathy of the husband to the wife, the diseases and inconveniences of some wives, violent passion and immorality or infidelity. Reserve and frigidity during the approach of the sexes is also a cause of sterility." The remedy in either case is apparent. As the opinions held by the childless may not be well grounded, they had best consult some competent and practical physician before pronouncing decisively upon the permanency of their condition.

MATERNITY.

Let us briefly consider the requirements and see if we can meet them. First there is a large amount of new flesh or muscle to be elaborated, in the enlargement and growth of the muscular fibre or walls of the womb itself, in the growth of the large fibrous and fleshy organ termed the placenta or afterbirth and also in the growth of the fœtus or child. This calls for a large amount of what are called albumenoid substances. These are found principally in milk, eggs and flesh. Secondly, new bones are to be developed, which calls for the carbonate and phosphate of lime, particularly the latter, which gives to the bone its stiffness and consistency. Thirdly a new brain and nervous system has to be developed, being a still further demand for phosphorus, which is found in eggs, fish, etc. In fact the mother's blood should contain all the elements necessary for the perfect nutrition of all parts of the body. Food consisting in great part of wheat bread (refined flour), butter, tea and coffee contains but a single substance of any value and that in excess; but the whole grains, wheat, oats and barley, either as grains or in the form of unbolting flour or meal, contain nitrates, phosphates and carbonatea. Add to this vegetables, fruits, milk, eggs and beef-steak and the dietary is as complete as it can and should be and these can be combined so as to give variety enough to satisfy an epicure.

By the use of these foods, the bowels are kept in good order, the strength is sustained, and cheerfulness of mind and disposition, al-

ways attendant upon good digestion and which is so necessary an attribute at this time, is acquired.

SIGNS OF PREGNANCY.

With the suppression of the catamenial discharge following the connubial embrace, pregnancy may be suspected. It will be confirmed by some of the many signs which attend upon gestation, no one of which is likely of itself to be conclusive. The breasts enlarge, the pinkish colored skin about the nipples turns to a brownish color and milk is secreted. From the stomach we have often the first signs and sometimes the most persistent feature. There is nausea or vomiting upon rising in the morning. This may recur during the day and, from the upward pressure of the uterine globe in the latter months, may induce dyspepsia. To the sympathetic irritation of the stomach may be ascribed the loss of appetite, morbid appetite, heartburn and headache. Toothache is common. The date of a dentist's bill will provoke a smile on many a mother's face. Some are annoyed by fainting, vertigo or palpitation. At the third month the abdomen, previously flatter than usual, becomes prominent and this enlargement increases. Constipation or irritable bladder or pain in the hips and back, cramps of the stomach or lower extremities and itching of the genitals afford additional evidences of pregnancy. Between the fourth or fifth month *quickening* occurs. This is the movements of the fœtus felt by the mother. It is a certain sign of pregnancy but is sometimes wanting. Like the other signs, its absence proves nothing. The movements increase in strength and frequency with age. During the latter part of the ninth month the globe settles perceptibly downward and as a consequence vomiting ceases, breathing is easier, the desire to evacuate the bladder and bowels increases, walking is more difficult, piles more painful and swelling of the veins of the legs more prominent. These indicate the approach of childbirth.

DISEASES OF PREGNANCY.

Morning sickness, as it is sometimes called, varies from a slight and passing feeling of nausea to a distressing malady in which vomiting is so persistent as to threaten and sometimes almost produce mania, anæmia and starvation. It comes on usually about the sixth week and lasts till the fourth month. When it is not excessive and does not derange the system, it is looked upon as a forecast of a good labor and getting-up.

TREATMENT.

It sometimes yields to simple means and at others many things may be tried before hitting upon the right one. A small cup of hot coffee and a cracker or two a half hour before rising may meet the case. We have been in the habit of recommending

R.—Fluid Extract of Rhubarb,	. . .	one dram,
Brandy,		two drams,
Essence of Spearmint,		thirty drops,
Bicarbonate of Soda,		one dram,
Water or Simple Syrup,		four ounces

Mix.

Put a teaspoonful in half a cupful of hot water and drink while in bed in the morning. This may be repeated at any time that sickness at the stomach occurs. We have never been obliged to do so, but would, if necessary, apply a belladonna plaster over the womb or rub laudanum over the stomach. When the MATRIKONINE (see page 608) is used as a uterine tonic we hear little about these and other distressing symptoms. It is pleasant to the taste, and we have always found that patients that take it in one pregnancy invariably send for it when they again find themselves in this interesting condition. When the nausea comes on at the sight of food, give the dilute phosphoric acid in doses of fifteen or thirty drops in a wine-glass of water before either or each meal. When all means fail look for an ulceration of the neck of the womb and treat by topical applications of pledgets of lint wet in carbolic acid and glycerine.

Constipation and headache are to be treated as advised in the chapters with these headings.

Palpitation may be relieved by rest. If a remedy is wanted it should be the aromatic spirits of ammonia or

R.—Chloroform, ... one dram,
Compound Spirits of Lavender, . . . one ounce.
Mix.

Dose, a teaspoonful in a little water every three or four hours.

Toothache may be remedied as advised under that heading, or by applying a flannel disk wetted in

R.—Tincture of Aconite root,
Tincture of Arnica flowers,
Laudanum, ... equal parts.
Mix.

And covered with oil-silk, tin-foil, or sheet rubber to the neck just behind the corner of the jaw by the ear. The extraction of teeth during the latter months of pregnancy is dangerous, being frequently followed by abortion.

Itching of the genitals may be relieved by bathing with essence of peppermint. This subject will be fully discussed in the essay upon Pruritus, to which the interested are referred.

There are many symptoms, not amounting to a disease, and yet keeping up a continual irritation of the body and the temper, due to a want of tone of the muscular system. The nervous system may become involved, if it is not already. It may be recognized by pain, soreness and uneasiness about the womb, by dull, dragging pains, rheumatic pains, sensation of weight and fullness, weak back, restlessness and sleeplessness. For all such we have but one remedy, Matri-konine. It is a "friend in need," for it improves the health, and this improvement is seen in more buoyant spirits, sounder sleep and better appetite.

Mania. The social degradation that attends the giving birth to an illegitimate child, often drives an unfortunate unmarried woman to

commit suicide; therefore, when a girl or widow inquires for abortive remedies to relieve her of her troubles, she should be put under *surveillance* or placed in an asylum where she may be screened from the eye of a taunting world. At the proper time if she does not choose to take her infant and endeavor to raise it, she should be encouraged to give her shame-born, yet innocent offspring to some childless married woman, whose heart is aching for an opportunity to twine its tendrils around a helpless creature; and thus one, if not more, would be made happy.

LABOR.—*Parturition.*

Labor is also known by such terms as *delivery*, *childbirth*, *travail*, and the French *accouchement*. In the description which follows, we confine ourselves to that class called natural labor, which requires no manual assistance and includes ninety or more cases in every hundred.

At about two hundred and eighty-three days from the appearance of the last menstruation, the nourishment and perfection of the fœtus is completed and the womb contracts upon its contents and expels "into the world" a living human being, the most helpless of the young of all animal creation. Its advent is announced by a slight flow of mucus streaked with blood and known as the *show*. Pains are felt about the lower part of the back and abdomen. *False pains* are so called because they are unattended with expulsive efforts and may annoy the patient for many hours before labor regularly begins. *True pains* come and go regularly and the contraction of the womb can be distinctly felt by the hand placed upon the abdomen. When these are noticed, attention should be directed to the

Preparation of the bed. A room should be chosen that admits of plenty of sunlight and has good ventilation. That part of the bed where the woman lays is to be protected with oil-cloth or a folded blanket that is not worth much. The blood and other fluids that pass away during delivery may be abundant enough to soil a large amount of valuable bedding. It is the nurse's duty to look after these things, but the patient should know about them and supply

them if she does not arrange them. Cleanliness is enjoined here as well as in every other part of the confinement. The bed-coverings should be light. The clothing may consist of those garments usually worn upon going to bed. These should be well drawn up about the waist to prevent soiling and a sheet folded in two used to cover and drape the lower part of the body. *The bladder and bowels must be evacuated.* This is of the greatest importance. If necessary, an injection of warm water should be used to unload the rectum. It may happen at a later stage that it is inexpedient and hazardous to rise, and yet there is a desire to micturate. The folded blanket should be relied upon to retain the urine and no one will be the wiser for its appropriation to this use.

It is not compulsory to seek the bed as soon as the pains begin. For some time walking, sitting and lying down may be alternated to suit the inclination. When the pains are strong and frequent, the patient should remain in bed upon the back or side. Position is unimportant, being more a matter of convenience, but once taken, should be retained. Rolling and tossing are risky because the position of the child's head may be changed and a natural and easy labor be transformed into one that is tedious, complicated, and fatal, perhaps.

The physician makes a digital examination at an early period and for several reasons. If the neck of the womb is found in any bulk the time is not up and the pains are false. But if the neck is flattened to a broad thin muscle with circular opening through which, with every pain, something protrudes, if the bony sphere is felt filling this outlet, if the vaginal canal is cool and lubricated by the show, if the external parts are soft and elastic, labor is in progress and one of which a speedy and happy termination may be prognosticated. The examination is made without exposure of the person or discomfort, and the assurance that "all is well," will amply repay for the courage exercised in overcoming any little want of confidence, momentary timidity, or disposition to oppose by unwise refusal.

If, upon examination, it is discovered that the position is unnatu-

ral, that some other part of the body than the head presents, or a loop of the cord is discovered lying in the vagina, morphine in one-fourth grain doses, may be administered until the expulsive efforts cease and the patient sleeps. Two things are possible by this method: first, from relaxation the child may, by force of gravity or other cause, assume a natural position, as discovered by Prof. P. W. Allen; and if, as in the country, much time will likely elapse before the arrival of a physician, a valuable delay is secured, and little, if any, progress is made in the labor.

The pains of labor may be not only mitigated but entirely overcome by the use of anæsthetics. We always use pure chloroform. If any one has any fears of, or objections to this, it may be diluted one-half, with ether or alcohol. In cities the profession, as a rule, employ it. A single administration will convert not only the person in labor, but the spectators, if such there be. We believe it to be perfectly safe and harmless. A few drops are thrown upon a folded napkin and held about a half inch from the nose at the beginning of each pain. Consciousness is never completely lost, pain is suppressed, restlessness and anxiety are removed, and the uterine contractions continue with regularity and, if anything, with increased power. The time of labor is shortened and recovery is quickened, since there has been no nervous prostration and only a limited amount of physical effort. Every woman having knowledge of the drug and its salutary effect in such instances, should demand and receive it. "An organic affection of the heart without pulmonary complication, rather calls for this hemi-anæsthesia than counter-indicates it, for there is less danger from the agent than from the woman's sufferings. Chronic pulmonary lesions indicate the use of chloroform on account of the repose brought on by its employment, taking the place of respiratory disorders brought on by painful efforts."

The position of the child and its progress can generally be recognized by the cries of the woman, particularly if she be "noisy." We have attended a number of confinements in which not a sound or groan was uttered. Such fortitude is worthy of imitation. The

fœtus is suspended in watery fluid contained in a tough membrane or sack called the bag of waters. This bag acts as a wedge and with each expulsive effort dilates the mouth of the womb until it is so distended as to allow the escape of the head into the vagina. Up to this event the cries are sharp and short; after this and during the descent through the pelvis and soft parts, the cries resemble a long continued and suppressed groan. The chest walls are fixed, the breath held, the lips compressed, and are not relaxed until the pain subsides.

The woman can now assist herself and feels inclined so to do. She wants a brace to her feet and something to pull. It is unnecessary to exhaust the strength of the nurse or physician for this purpose. We manage about in this way. The diagonal corners of a sheet are tied in a hard knot, having first twisted it into something like the shape of a rope. To this cloth ring the patient can hold with both hands. A rope is tied to it and fastened to the bed post or passed over the foot board and fastened to a slat. Upon the foot of the bed is laid a stool, ottoman or chair to brace the feet.

It is of great advantage to the lady if the physician will make a roll of a napkin and with each expulsive effort press the end of the roll with some force against the anus. In so doing, support is given to the rectum, and that force which would be spent upon the bowel is neutralized. The peculiar advantage lies in the fact that with the support of the bowel, the hemorrhoidal veins are supported, and as a consequence, there is little, if any subsequent liability to piles. Few mothers are free from the affection, and a little thought at this time would have saved much suffering.

During these pains the bag of waters ruptures and discharges part of its watery contents. Opening too early, it retards delivery; when the head has passed the mouth of the womb it has the opposite effect. It is often properly and purposely ruptured by the finger nail.

When the crown of the child's head is protruding, the perineum (the flesh between the vulva and anus) may, during a pain, be slipped

over the child's face, when delivery occurs at once. At this time the expelling pains are strong and the final ones come so closely together that they are termed *double pains*. From meddling or other causes the perineum when so greatly distended, may be lacerated. *Rupture of the perineum* is not common, and when it does occur requires stitching at once while the parts are numb. The knees should be bound together to prevent tearing out the thread or wire.

With the birth of the head comes a period of rest. The cord if about the neck is to be unwound. The next pain brings the body into the world, when the child, if its mouth is not filled with mucus, and which can be easily removed by the finger of the accoucheur, cries: a welcome sound to the mother who knows by this that her pains are about over, that her bright hopes and prospects for months are realized and that her babe is living.

The child is still attached to its mother by the cord which passes from its navel to the placenta or afterbirth. When pulsation has entirely ceased the cord should be divided at a point between two and three inches from the child's abdomen. Contrary to common practice we omit tying the cord. Fully ten years ago this plan was advocated, and it is a pleasure to introduce the testimony of others in regard to the ground then taken. In one of our large city hospitals a test was made of thirty cases, in fifteen of which the ligatures were applied while in the remaining fifteen this procedure was omitted. The progress of every case was closely watched and every symptom noted. Of the infants whose cords were tied "four had severe diarrhoea without jaundice, seven had profound jaundice with clay-colored stools, eleven had enlargement of the liver and as for colic, this seemed to be a complaint shared in common by all, and seemingly these little ones were more troublesome, requiring more attention, appeared more fretful, in a word, they were not as good babies as those in which the umbilical cord was not tied." Of the untied cords, the seventh was divided while the cord was still pulsating strongly (we object to this) and the result was a loss of about three ounces of blood. The case however progressed favorably, and in

common with all the other cases, "the cord dropped off about the fifth day; no evidence of jaundice; not often annoyed with colic; bowels were very regular; appetites were good and sleep was sound." A dull pair of blunt pointed pocket scissors was used, so as to "hack through the cord, not at one cut, but by a sort of nibbling process."

The child must then be thoroughly oiled all over with lard or anti-septic ointment, particularly between all folds of flesh, the toes and fingers, behind the ears, in the arm-pits and between the legs and the hair; wrapped in a shawl or blanket, and laid away upon its right side with its back to the fire, for an hour's nap. It will then be time enough for the soap and water bath and the cold and tedious dressing. If these few directions, apparently so trifling, are carried out as we have directed, much future trouble will be avoided. The oiling loosens up the cheesy coating of the infant's body. Soap and water will not completely remove it unless sufficient pressure and rubbing is used to irritate the tender skin; in either case skin diseases follow. Oiling is the most invigorating bath we have for all persons, young or old. Oiling is easiest done. There is still another advantage, not to speak of the benefits of the sleep; if the subsequent washing with soap and water is imperfectly done, as is usually the case on the first occasion, less harmful results will follow than where the soap and water only are used. The skin of infants treated in this way are certainly clearer, and through childhood are troubled less with pimples and blotches. It is placed upon the right side to facilitate changes going on in the heart.

The afterbirth next needs attention. If fifteen or twenty minutes have elapsed and it has not been expelled, press firmly upon the uterine globe while the woman bears down. This will cause a pain and its expulsion. It may be lying in the vagina; it can then be removed by traction upon the cord or upon the presenting part of the placenta. This completes the delivery.

For the management of *flooding in labor*, see the treatment of hemorrhage in abortion, page 592.

The average duration of labor is from four to six hours. It varies, however, from a quarter-hour to three days. First labors are generally most tedious, but there is less probability of trouble following, and recovery is less protracted and incomplete. During the progress of prolonged labors the patient must be occasionally refreshed with draughts of warm milk, hot gruel, or tea, or coffee. She must be rested by occasional change of position. A labor may be hastened by a bandage a foot wide, fastened tightly around the body and over the womb, but do not use medicines. We confess this is the only good we ever found in a bandage. Let us consider

THE BANDAGE. Custom is followed blindly in this matter, and, as in others, people seldom stop to inquire into the whys and question the wherefores. The majority of authors advise its use without specifying the reasons for it. In advising its disuse we have good and sufficient reasons which we will here elucidate:

First. Regarding it as a wrap or garment, it overheats this part of the body (now particularly sensitive), to the detriment of others. Overheating, particularly in warm weather, produces profuse perspiration, which is innocent enough of itself, but becomes a dangerous factor from the inclination to fan violently and cool suddenly.

Second. It is claimed by its advocates that in consequence of the pressure it exerts upon the womb—now a large globe—it produces absorption, and, as a result, hastens recovery. This is erroneous, because the back and sides of the cavity in which the organ lies, are constructed of bone and are immovable. Pressure, therefore, can only be upon the front of this globe, which has simply the effect of flattening it. In time, as the uterus contracts, it is evident that the bandage is unable in the least to press the globe.

While the organ is thus enlarged and engorged, pressure in front is injurious because its effects are transmitted to the latter portion of the bowel, inducing constipation. By the bandage slipping, the force may be applied so as to press the uterus downward, simulating and perhaps producing "falling of the womb." Applied in other ways other misplacements may follow.

Third. When the bandage is very tight and fastened, it gives a feeling of security that is hazardous. The *smart* woman, tightly girdled, leaves her bed long before she is physically able. The results, although they may not immediately follow, are disastrous, and many cases of misplacement and leucorrhœa the physician traces back to just such times when recovery was so rapid. This support is but a crutch and as such should only be used when indispensable. Many a limb is enfeebled and cure retarded by the crutch, for if dispensed with, the injured limb would be exercised more, the rapidity of the circulation increased and with it nutrition, which is another name for natural healing. So in some cases the bandage being used, is continued in use and some support seeming to be necessary, the artificial is permanently adopted. Those physicians who do without the bandage are well aware that little effort is made to leave the bed until recovery is complete. It may consume a week's time on such occasions, but the beneficial effects are felt all through after life. As we have plainly indicated, getting up is more prompt with the bandage than without it, but we hope our readers, thoughtfully weighing the past consequences of its use, will not be so foolish as to adopt it for a passing notoriety or the saving of a few day's time at this period, when every arrangement is made for your comfort, and for relieving you of the cares of your house and household.

When the placenta has come away, all the soiled clothing and bedding must be removed. The thighs, hips and soft parts should be washed in soap and hot water and a clean napkin applied. Remove the rubber cloth and sheet covering, bring down the clothes from the waist and cover warmly. The mother is quite likely to feel chilly after the labor is completed, hence the need of extra bed clothing. Darken the room, compel perfect quiet and if possible let the mother have a half hour's sleep. After such a refreshing slumber or after the infant has had its nap out and been washed and dressed, an attempt should be made to nurse it. If not successful at first do not prolong the effort long enough to worry and fatigue the mother or child. In an hour or two both may do better. In the first twenty-

four hours of its existence the child needs sleep more than food and if undisturbed, it is likely to get it.

Contractions of the uterus continue to a limited extent after delivery, causing pains resembling labor pains. These are called *after-pains*. The parent with first child escapes this annoyance usually: upon subsequent births they are more common. These contractions are necessary to expel clots and tend to restore the womb to its non-gravid proportions. The pain is almost completely controlled by the use of *veratrum viride*. We always use it, not only for this but for the soreness about the muscles, to prevent inflammations and control any tendency to milk fever or other irregularities. The prescription is,

R.—Tincture of *Veratrum Viride* . . . thirty drops,
 Essence of Wintergreen, . . . twenty drops,
 Water, ... ten teaspoonfuls.

Mix.

Dose. A teaspoonful every two, three or four hours.

The diet should consist of good and nutritious food. Some fancy this is unpleasant and unpalatable, but far from it. With two to care for, it must be considered a lack of good sense to withhold the actual needs of one, but such is the customary starvation regulations of "toast and tea." Although the condition is similar to that of the amputated limb in few respects, the demands for a sustaining and nourishing diet are the same. If the mother wishes to retain her strength and at the same time develop a strong and hearty child, she must rely principally upon what she eats and drinks; at the same time she should be willing to forego to a considerable extent the desires of a depraved taste and the use of substances which, although not actually harmful, are positively useless. Stimulants and condiments are useless; these include wine, beer, ale, porter, tea, coffee, pepper, spices, etc. In fact there is nothing to indicate a change in the dietary from that followed during gestation and which we noted in speaking of the requirements of maternity. Except in one particular, lessening the quantity while the customary exercise is wanting, there is every reason for its continuance.

ABORTION, MISCARRIAGE, PREMATURE LABOR.

These terms are synonymous. The technical differences are easily comprehended. Miscarriage is the general term, signifying the separation and expulsion of the foetus from the womb at any period before the full time. In this dislodgment occurs before the seventh month of pregnancy, a time when the viability is supposed to be so well developed that life continues after birth, it is designated abortion. Premature birth is miscarriage between the seventh month and full term.

The causes of abortion may be natural or accidental, and hence unavoidable, or they may be intentional and criminal. Diseases of the womb, of the ovum and of the foetus, can hardly be detected, and their tendency to miscarriage diverted. In the scrofulous, the consumptive, the syphilitic and those afflicted with eruptive fevers, the attachments are insecure or readily become so. The membranes are sometimes ruptured by blows, falls, jumping, jolting, lifting or coughing. These accidental agencies are occasionally resorted to by the designing, without generally meeting their expectations. There are other and more subtle causes of abortion that need mention; sudden shocks, great agitation, prolonged emotions, mental and physical exhaustion, venery and we are sorry to add, the employment of medicines and surgical appliances. This should be qualified to meet cases of necessity, where from deformity of the pelvis, from serious and unmanageable dropsy, from paralysis, amaurosis or like complications, life or some of the senses are jeopardized: a council of physicians could legally decide upon this method of relief. The medicines employed by the ignorant or prescribed or furnished by the professional abortionist (a viper, found not only in our large cities but lurking in towns and villages) are either inert or powerful irritants. The latter are dangerous, for the amount of irritation necessary in the uterus to consummate the purpose, exists in every part of the system, increased, perhaps, in the stomach and brain, threatening if

not actually precipitating, gastritis, peritonitis or convulsions: surgical means are safer but not without hazard.

In the first and second months of gestation, miscarriage resembles painful menstruation. The pain is more severe and the hemorrhage more profuse. At all periods an attack is ushered in by hemorrhage more or less severe, according to the cause, the time of pregnancy and the constitution. After the third month the "waters" may be discharged, in which case miscarriage cannot be averted. Pains similar to those of natural labor occur, and with greater uniformity as full term approaches. In cases of abortion from mechanical interference, if the neck of the womb is inflamed, the pains during expulsive efforts of the uterus, greatly exceed those of childbirth. The nervous shock may be so great as to produce rapid sinking and death. Hemorrhage is likely to be the prominent symptom, but fatal terminations may originate in the subsequent inflammation. The foetus may come away and the placenta or afterbirth be retained. This may remain for weeks without doing injury and be eventually expelled, or it may decay, and the body become poisoned by the absorption of the putrid accumulations. The hemorrhage is to be treated by

R.—Tincture of Fleabane, ... five drops,
Tincture of Cinnamon, ... ten drops. **Mix.**

Given in half a cup of hot water every half hour, a hot pack to the lower part of the spine, the spirit vapor bath, opium per rectum, and by *absolute rest*. In addition the vagina may be filled with lint or old linen, which acts as a tampon or plug. See treatment of Menorrhagia.

It is difficult to treat of a practice so deeply inwrought into social life, and yet kept so sedulously from public view. Yet there are things which must be said and some one must say them, taking the risk of being misapprehended and misrepresented. "There are members of the medical profession, otherwise of high standing, whose hands are bloody with the guilt of the crime of abortion, and

abortion is committed by the wives of respectable citizens, who are taught to do so by their family physician." It is plain, therefore, that it cannot be arrested by denunciation, statutory enactment, or criminal prosecution, as so many seem to imagine. A Hebrew prophet once imprecated the women of a people: "Give them mis-carrying wombs and dry breasts." A woman of the nineteenth century would adopt this curse as her most earnest prayer. Nor do we exclude the men, the fathers of our time, from the censure; men are seldom better than women, and, indeed, often impel women to wrongdoing. If men becoming husbands really loved their wives, they would instinctively and intuitively desire offspring by them. A true man always desires that the woman he loves shall be a mother; and a true woman, so beloved, is willing and eager to become what he wills.

But our religious notions are saturated with the leaven of hypocrisy; we scorn the unmarried woman whom love or weakness has rendered a mother, and withhold sympathy and respect from the married woman of frequent maternities. The fruit we are reaping is more bitter than the fabled apples of Sodom. Connubial love is dying out and homes are ceasing to exist. Selfishness underlies our social life and stimulates us to crime. If maternity is not revered as holy, it should at least be made less unhonored. Society, which maintains paupers and criminals, and renders benefactions to the impoverished and unfortunate, must do something kindly for unfortunate mothers. The rights of their children to life, and the enjoyments of life, are as good as those of the more favored. It is inhuman to make such carry about with them a reproach. Let there be more hospitals and asylums established for pregnant women, giving the inmates all the privacy which their peculiar circumstances may demand. If they choose not to rear their own offspring, nurses and foster-mothers should be procured who will. Probably if those who are stigmatized as "fallen," could have encouragement, few would care to abandon their own children; but at any rate, disgrace should

be warded off from mothers, and justice meted out to their guiltless little ones.

Already in New York the proportion of still births to the others is frightful, and other cities are no better; country neighborhoods are doing their part also. Neither the Hindoo mother nor the "Heathen Chinese," drowning or smothering supernumerary children like puppies or kittens, is a whit behind our Christian parent. Each alike regards infanticide as not a crime; yet how can we hang murderers of adults, while conniving at the pre-natal massacre of children? Herod and Kansa ought to be canonized for our veneration, with such a public sentiment. But let those overtaken in a fault be restored in a kindly spirit; let the ban of society be taken off the woman who has chanced to step beyond its provisions, and every encouragement given to the preservation of the lives of the unoffending. The offence of one who loves is far less culpable than that of society when it places a stigma upon her. Let her child be made welcome to life, and not laden with opprobrium that will make that life a burden. The odium cast on sexual aberration is the great cause of pre-natal infanticide among the unmarried, as selfishness is among the married. Abortion will be resorted to in order to avoid disgrace. Abortion is a prolific source of calamity. Cancer and other fungoid growths, displacement of the womb, destruction of its functions, metritis, hystericalgia, ovarian disease, sterility, enervation, wasting, and a host of ailments too numerous to recapitulate, are the sequence. She who commits abortion sins against her own body, as well as moral nature; and for it there is no remission, but a terrible expiation. Even when syphilitic and scrofulous husbands are the secret cause of miscarriage, the woman is still a sufferer.

But threatening of penalties, or the infliction of physical punishment, is only a superficial method of treating the matter. There is no cure for abortion and its kindred mischiefs but morality, and there is no morality in a discipline with fear for its basis. The evil will be corrected when men and women become intelligent and unselfish. Nature has implanted the love of offspring in every one, and with it

the instincts which prompt to generation. Upon these we may not hope to improve. If God created them, he accounts them clean, and we may not regard them as impure or profane. In this particular is an important point. Meanwhile, let us in concert invoke our women "that their eye be not evil toward the son of their womb." Let every one be made welcome into existence, and as far as in us lies, let that existence be rendered a blessing. A house-full of well-reared children is more precious to persons in declining life than any accumulation of pecuniary wealth. What remembrance can be more harrowing to a woman than that of a slain embryo, of a child wounded by the endeavor to dislodge it from its first resting place, or with its existence embittered by having been born unwelcomed? Meanwhile, we would caution persons never to venture upon parentage at random, but to be prepared in physical and mental conditions, and deliberate in purpose in the matter. A child so engendered is likely to be under more propitious auspices.

We appeal to teachers and educators, in whatever capacity, to impress these considerations upon those with whom they have to do. The future of our nation and of every people, is in this issue. Mere moralizing, and threats of penalty, whether in our jails and prisons, or in the house of God, will accomplish but partial benefit. Let it be known, that abortion is not only an offense against God and man, but an act which infuses moral and physical contamination ineradicably into the person of the offender.

CHILD-BED FEVER.—*Puerperal Fever.*

This dreaded disease combines an inflammation of the peritoneum, or covering of the bowels, and a blood poisoning from the absorption of decaying matter in the womb. It is at times epidemic, and may be carried by the physician or nurse from one patient to another. It is always a good plan to enquire of either before entering the parturient chamber, if they have been with patients so afflicted, within two or three months. If they have, it would be wise to dismiss them

at once and secure the services of others who have not been exposed to the possible contagion. This fever occurs within a week after confinement and is ushered in by a severe chill or by chilly sensations. *The discharges stop* and the milk is scanty or entirely wanting. There is pain in the abdomen, increased upon pressure. This soon begins to swell, eventually becoming hard and greatly distended. The pulse is full and rapid, skin dry, breathing hurried, tongue coated, thirst great, countenance pale and anxious. Restlessness, delirium, coma and death follow.

TREATMENT.

As the disease is a poison in the blood, absorbed from the uterus, efforts should be made to re-establish the discharge and have the current of matter flowing outward instead of inward, and to eliminate that already in the circulation. The first indication is met by injecting, by a continuous stream, a quart of water to which ten or twenty drops of carbolic acid have been added, into the uterus. Of course, it will escape as fast as introduced. The water should be quite warm, so as to heat and relax at the same time. This may be repeated in an hour. Place hot packs over the lower abdomen. To cleanse the blood, take

R.—Podophyllin, ... two grains,
 Cream of Tartar, ... two drams,

Mix thoroughly and make four powders. Give one in molasses every two hours until free catharsis. Use the bed-pan or cloths to receive the dejections. At the same time the kidneys may be called into activity by

R.—Tincture of Colchicum seeds, . . . four drams,
 Spirits of Nitre, ... three drams,
 Acetate of Potash, ... two drams,
 Essence of Wintergreen, . . . one dram,
 Water, ... three ounces.

Mix.

Take a teaspoonful every two or three hours. If these means have been used early this terrible disease will be mastered in forty-eight hours. The flow re-established, the danger is past. The after-treatment will consist of a dose of the last recipe every six hours, and a teaspoonful every four hours of

R.—Tincture of Veratrum Viride, . . . forty to sixty drops,
 Essence of Wintergreen, . . . twenty drops,
 Water, ... two ounces.

Mix.

PUERPERAL CONVULSIONS.—*Puerperal Eclampsia.*

When the urine contains a large amount of albumen, and when flashes of light appear before or during the early stages of labor or both, convulsions may be anticipated. The treatment will be the same as though they were actually present, but in a milder manner.

TREATMENT.

The principal indications are to stop spasmodic action and lower the pulse. This done, fatal effects are thwarted, and by watching the pulse the return of the convulsions is prohibited. Veratrum viride should be given in small doses at first, increasing in size and frequency if the pulse does not fall to seventy. If convulsions occur before this effect can be produced, chloroform should be poured, a teaspoonful at a time, upon a folded napkin and placed to the nose for inhalation, care being taken to allow a free admixture of air. The patient need not be placed too deeply under the anæsthetic at the time of the convulsions, but if the convulsions come on with increased force, it would be advisable to put the patient more deeply under the influence, withdrawing the anæsthetic as the spasmodic action ceases. But, above all, see that the chloroform is pure. As soon as the spasmodic action ceases sufficiently to allow the patient to swallow, give from ten to twenty drops of tr. veratrum viride. Repeat in from fifteen to thirty minutes, until all symptoms of convulsion cease, or until you get sedation from the medicine, which you will determine by the pulse falling to sixty, or in some cases, as

low as fifty pulsations a minute. If the case should be a severe one, and the patient not speedily recover consciousness, administer a brisk cathartic; also procure, if possible, a bladder filled with broken ice, and apply to the head. After the convulsions are broken, the veratrum may be continued in from two to five drop doses every three hours.

In some cases there may be persistent vomiting from the effects of the veratrum; if such should be the case you may have to employ brandy in small doses, one-half teaspoonful or less, by the mouth or by the bowel.

If there is coma following the convulsions, give small doses of tincture of belladonna until these symptoms abate. When the patient has somewhat recovered, treat her on general principles, according to the indications, keeping in mind the necessity of changing the albuminous character of the urine.

If albumen has been discovered in the urine before labor, the convulsions may be anticipated and averted by using

R.—Tincture of Colchicum seeds,	. . .	four drams,
Spirits of Nitre,		three drams,
Acetate of Potash,		two drams,
Essence of Wintergreen,		one dram,
Water,		three ounces.

Mix.

Take a teaspoonful every three hours.

PUERPERAL MANIA.

Insanity is likely to follow childbirth in those hereditarily predisposed and in the hysterical. There is in such an extreme susceptibility to excitement, which is increased during pregnancy. We find deranged digestion, frequent headaches, restlessness, sleeplessness and sometimes suppression of the discharge. Mania may appear at any time before birth or immediately after. Like insanity from any cause, it may develop a mild type like melancholia, or madness; may exist for a few hours or for life.

TREATMENT.

If the discharge is stopped it must be restored as above described. To relieve the distress (congestion) in the head give teaspoonful doses of calcined magnesia every hour until the bowels move freely. Follow with

R.—Tincture of Gelsemium, ...	two drams,
Tincture of Black Cohosh, ...	one dram,
Simple Syrup, ...	one ounce.

Mix.

A teaspoonful every four hours should be given and continued for as long a time as the mania remains.

AMENORRHOEA.

Suppression of the menstrual flow may be due at times to natural causes. These include their cessation at the critical period in advanced life and the inception of gestation. As a disease it has acute causes such as suddenly taking cold, emotional feelings, distressing news, sudden and prolonged fear or fright, and the like. As a chronic disease its origin is usually to be found in those influences which produce great depression of the vital forces. Local inflammation or bloodlessness, sedentary habits of school girls, the conditions of the system in consumption and in chlorosis, are all agents in its development. Hemorrhages, whether from the bowels, lungs or stomach, may be classed as causes, and are not unfrequently a *vicarious operation of the menstrual function*. Imperforate hymen may assimilate it.

TREATMENT.

To bring about regularity requires removal of the cause, whatever it may be. Consumption, chlorosis, local inflammation and oppression of the vital forces, demand remedies peculiar to themselves, and when they are benefited or remedied the menstrual function will be resumed without the adoption of means specially directed to that end. To relieve the headache, flushed face, hot skin, generally caused by cold, or strong emotions, put the patient to bed and apply

the hot pack to the abdomen. Hot foot-baths should be given *while in bed*. If any remedy is required, some diaphoretic, as hot tea or cayenne pepper and hot milk, may be taken. If preferred, administer the following powder:

R.—Morphia,		one grain,
Powdered Camphor,		twenty grains,
Bicarbonate of Potash,		twenty grains,
Licorice,		twenty grains.

Mix, and make ten powders, and give one every three or four hours. This does not nauseate, promotes perspiration, causes free circulation, and quiets nervous tension. If the patient is full-blooded, with flushed face and strong, full pulse, administer some laxative. Aloes seems particularly indicated in this disease, as it exerts its greater force upon the lower abdominal viscera. A pill composed of

R.—Aloes,		one grain,
Extract of Nux Vomica,		one-half grain,
Licorice,		one grain,

May be given. The diet should be limited and plenty of outdoor exercise enjoined. In anæmia, the food should be rich and plentiful and every hygienic means employed that will tone up the system. After a mild laxative, such as the rhubarb cordial, in a majority of cases iron is indicated. We prefer to combine it as follows:

R.—Sulph. Magnesia,		two drams,
Sulph. Iron,		eight grains,
Sulph. Quinia,		twelve grains,
Dilute Sulphuric Acid,		one and one-half drams,
Fluid Extract Ginger,		two drams,
Simple Syrup,		one ounce,
Water,		eight ounces.

Mix.

Take two tablespoonfuls night and morning. Or, when iron disagrees,

R.—Tincture of Guaiac,		one ounce,
Tincture of Ergot,		one ounce,
Simple Syrup,		four ounces.

Mix.

Take a teaspoonful three times a day after meals.

We have relieved many cases with Matrikonine.* When possessed of an office battery, the judicious application of electricity will be found effectual, supplemented, if desired, with the aloes laxative. It should be used with regularity twice a day for the three days previous to the time of its expected appearance.

PAINFUL MENSTRUATION.—*Dysmenorrhœa.*

Not more than five per cent. menstruate without some pain, varying from slight disturbance to intense pain, equaling if not exceeding that of labor. The term is a general one and may be divided into ovarian and uterine, and subdivided into congestive, inflammatory, membranous, neuralgic, that from prolapsus or chronic metritis and obstruction caused by some malposition of the womb which bends and partly occludes the discharging canal.

In ovarian dysmenorrhœa there is constant and severe pain in the region of the ovaries at either side of the lower abdomen, much headache, and frequently vomiting. The pain appears for one or two days before the discharge, and for one or two days afterward. In rare cases convulsions are met with. In all the varieties of this affection there is, preceding the attack, a feeling of languor and weariness, pain in the back, a feeling of weight in the lower part of the abdomen, followed during the occasion with periodic pains, increase in intensity of the symptoms, and sometimes fever, loss of appetite, headache and vomiting.

TREATMENT.

When there is prolapsus or misplacement of the uterus, the correct adjustment must precede all curative efforts tending to relieve the painful menstruation. In ovarian dysmenorrhœa, give

R.—Muriate of Ammonia, . . . two drams,
Tincture Aconite leaves, . . . two drams,
Water, or Simple Syrup, . . . eight ounces.

Mix.

Take a teaspoonful every three hours from beginning of pain to end of period. In addition to rest in bed, apply hot packs to the lower part of the abdomen and give opium at night. This treatment applies in the neuralgic type.

In all cases of functional dysmenorrhœa, we rely upon the viburnum compound with or without the addition of gelseminum three to five drops to a dose.

In metritis, or inflammation of the womb, which is chronic, and is accompanied with enlargement of this organ, there is tenderness and pain on pressure over the womb and usually some discharge, more or less fever and pain running down the thighs or groins. This dysmenorrhœa can be relieved by the treatment last mentioned. During the intervals, injections of hot water should be used each day, as hot as can be borne. Some will tolerate as high a temperature as 98° to 104°. A family syringe that will throw a constant and steady stream should be employed, and the operation continued for fifteen minutes at each application. Every female, single or married, should possess such an instrument on the ground of cleanliness, to thoroughly wash out the vagina with luke-warm water after each menstruation.

There are a few cases of dysmenorrhœa caused by the contraction of the canal of the neck. This can only be discovered and treated by the physician or surgeon. The treatment consists of dilating by the sponge tent, or, better still, to secure a permanent and perfect cure, by incision. After opening, introduce a tampon or plug of clean oakum previously soaked in carbolic acid and water, one part to twenty. After a few hours, if any oozing is noticed, dip the tampon in a weak solution of persulphate of iron and reapply.

MENORRHAGIA

Signifies profuse menstruation, but may apply to unnatural and unusual frequency, quantity or continuance. In either instance the recurrence is due to organic disease of the uterus, to general debility from excitement or excessive labor, or to a constitutional condition tending to hemorrhage.

TREATMENT.

In most cases, uterine and constitutional tonics are indicated. We prefer for such a purpose,

R.—Tincture of Guaiac,		one ounce,
Fluid Ext. of Ergot,		one ounce,
Fluid Ext. of Hamamelis,		one ounce,
Simple Syrup,		four ounces.

Mix.

During the hemorrhage take cinnamon and hemlock barks, and witch hazel leaves, equal parts of each and make a strong tea. Give a tablespoonful every half hour or hour. Or

R.—Tincture of Fleabane,		one dram,
Tincture of Cinnamon,		ten drops,
Glycerine,		one ounce.

Mix and give ten drops every two or three hours. Complete rest in bed must be enjoined. Cold packs may be applied to the abdomen, and a bag of hot salt to the lower spine. If abortion is suspected, a physician should be called.

VULVITIS.

This is an inflammation of the lips at the entrance of the vaginal canal, seldom occurring as a disease of itself. It is an accompaniment of other female complaints, chief among which are acrid leucorrhœa, falling of the womb and inflamed vagina. The prominent symptoms are pain, heat, swelling, sometimes to such an extent as to close the canal, and inability to sit, stand, walk, or pass water without dif-

ficulty. Itching of the parts and surrounding surface is often distressing.

TREATMENT.

Make a poultice of hops and lobelia, equal parts, and apply continuously, renewing as often as it loses its heat, until the swelling subsides. For the itching see treatment of *Pruritus Vulvæ*.

VAGINITIS.

By this term is signified an inflammation of the lining membrane of the genital organs of the female. It may be caused by a relaxed condition of the membrane and of contiguous muscles, by misplacement of the womb, by specific inoculation and other causes. It is so invariably attended with the discharge of large quantities of white vitiated mucus, and the treatment varies so little from that of *Leucorrhœa*, that the reader is referred to that subject for further particulars. In addition to the means then recommended, we call attention to the fact that glycerine and water used with the Irrigator although followed by an increased discharge of water, speedily allays the heat.

WOMB DISEASES—UTERINE COMPLAINTS.

Foremost among these is an inflammation of the womb, **METRITIS**. This is quite common in the chronic form when it appears as a permanently congested and enlarged state of this organ. When appearing suddenly, as it does after delivery or abortion, there is heat, pain, swelling, tenderness upon pressure and a high fever with vomiting and headache. In time the peritoneum becomes involved, the bowels bloat, the milk is defective or wanting, the discharges lessened or stopped, and the urine dark and scalding when passed. The treatment of this condition consists of the use of warm water injections, as hot as can be borne, into the vagina, and internally veratrum in three-drop doses every one, two or three hours. In the chronic form there is the permanent enlargement to which we have alluded. Even this is subject to variation. A hard day's work, long standing on the feet,

or lifting heavy weights, all tend to further congest the organ; sometimes in a few hours its enlargement is quite perceptible. A night's rest tends to restore its dimensions, but not to the normal proportions. With this distention other organs suffer by pressure, as the bladder, bowels and stomach. These become irritable and sometimes inflame: more frequently there is disturbance of their functions. But chronic inflammation does not always involve the body of the womb, as just described. It may attach to the lining membrane and produce catarrh, a uterine leucorrhoea with a thick ropy discharge.

The body may be quite free from disease and yet the neck or lower portion be painful, hot, and swollen. This is the case in dropsy and *ulceration* of the neck. The condition can be best ascertained by local examination, but may be suspected if there is pain



VAGINAL SPECULUM.

in the back and on the top of the head, with constipation generally, etc. The treatment we will notice when we come to consider female weaknesses, a more popular but less accurate term applied to these affections. We wish first to describe uterine

DISPLACEMENTS.

The womb occupies the pelvic outlet and is firmly held in place by strong, fibrous, or muscular bands. In general good health these are all sufficient. It is evident that continued pressure, and all other agencies that weaken or relax muscular fibre, will lessen this hold and result, necessarily, in displacement. The whole organ may be thrown forward, and resting upon the bladder, irritate this viscus, causing chronic cystitis and other disorders. This is called *anti-ver-*

sion. It is more frequent than retroversion, because, in its natural position, the body of the womb is slightly inclined forward. *Retroversion* is a similar misplacement, but in an opposite direction. The weight rests upon the rectum, producing persistent constipation, if nothing worse. From the inflammation attending uterine version, adhesions are not unfrequent, and hence replacement is rendered difficult or impossible. Uterine flexion is a limited or incomplete version. The neck remains at, or nearly in, its proper place, and the body, the upper and heavier portion of this pear-shaped organ, inclines forward, called *anti-flexion*, or backward called *retro-flexion*. The symptoms are less severe than in the case of version, but play an important part in engendering dysmenorrhœa or painful menstruation. Bending a straw at right angles illustrates the condition of the uterine canal, the constriction at the bending point showing, in a rude way, the obstacle to be encountered in the passage of the menstrual fluid. To rectify either version or flexion requires the physician's aid. In those in whom the displacement is recent, or but slight, a cure may be effected by following, as far as applicable, the treatment given below. An emphatic protest is made against following the advice sometimes given to patients. It is that in antiflexion they should hold their urine as long as possible, so that the distended bladder may raise up the depending body of the womb, and for the same purpose in retroflexion, that the feces should be retained. Such management does not the least good, but, on the contrary, harm and only harm. *Inversion* is a third form of version. Not only does the uterus come down, but literally turns inside out. The rude abstraction of the afterbirth, traction upon the cord in rapid labor, and weighty tumors produce it. Fortunately it is very rare.

FALLING OF THE WOMB.—*Prolapsus Uteri*.

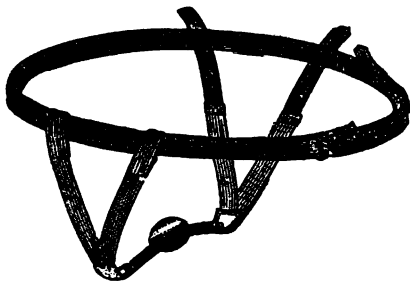
This displacement is neither to one side or the other, but directly downward into the vaginal canal. It may even go so far as to protrude "into the world." All the ligaments and muscles are relaxed

and enfeebled as well as the surrounding tissues. Congestion and leucorrhœa weaken the vaginal walls. The bladder is dragged out of place and inflamed, and the urine dark-colored and burning. The rectum is submitted to pressure and persistent constipation and piles attend. The back aches continually while upon the feet, and walking is slow, measured and difficult. The stomach soon becomes involved and we have the symptoms of dyspepsia.

TREATMENT.

Corsets and all constricting bands about the waist which bear the weight of the skirts must be removed and the clothes so made as to receive support from the shoulders. Flannels, light or heavy, must afford an even warmth of surface the year round. To still further encourage healthy circulation of blood, the whole body should be daily bathed, rubbed and submitted to gentle blows by the palm of the hand. When practicable, these offices may be rendered by an assistant. Knead the abdomen thoroughly and oil with the antiseptic ointment. Keep the bladder empty and the bowels solvent and regular in either instance without straining (see Constipation). Avoid lifting as much as possible. All treatment will be useless unless the leucorrhœa is cured (see Leucorrhœa). Treatment for this should therefore begin with the other means advised. At the outset it will be best to lay in bed for some time, if possible a week. The best form of exercise is *walking*. The distance should be short at first but *daily* increased, if but a little.

The walking and stroking give tone to the whole system and to the pelvic contents in particular. Upon first attempting to walk after the rest, a perineal support may be necessary. This consists of a stout band of webbing some two inches in



PERINEAL SUPPORTER.

width and possessing only sufficient elasticity to give an inch or two. A belt of this passes around the hips (not the waist) and is buckled or buttoned in front. On the back are sewed two buttons about six inches apart. From these pass bands of stout cotton down to a pad placed against the perineum. (The perineum is the part of the body between the anus and vulva). Two similar bands, but narrower, secured to the front of the pad pass forward and are fastened by buttons to the belt in front. First fasten to the belt the buckles and buttons. Then make the pad and sew on the four tapes. The places for working the button holes are then easily found. Complete rest is necessary during menstruation. Upon retiring, the womb should be elevated as far as possible, with the finger. For internal treatment we employ a preparation to which we have given the name of **MATRIKONINE**. This is so compounded as to meet every indication. It relieves irritation of the bladder, excites healthy action of the bowels, tones up the mucous surfaces, strengthens muscular tissue, contracts the fibres of the womb, thereby diminishing the engorgement or enlarged condition and diminishing the weight of this organ, and its tonic effect is noticed in improved appetite and digestion. It is composed of

R.—**Fld. Ext.** Partridgeberry,
 “ “ Black Cohosh root,
 “ “ High Cranberry bark,
 “ “ Helonias root,
Tinct. Guaiac, . . . of each, two drams.
Simple Syrup, . . . sufficient to make eight ounces.

Mix.

Take one teaspoonful every two, three, or four hours as required. If a stimulant is indicated, or if sweets disagree with the stomach, which frequently happens in these complaints, substitute for the Simple Syrup, Glycerine one ounce, and Native Grape Wine five ounces. If pills are preferred:

R.—**Ext.** Partridgeberry, . . . two drams,
 Viburnin,
 Macrotin,
 Helonin, ... of each, one dram.

Mix and make 100 pills. Take one every two or three hours.

Unlike most nostrums in the market, we do not recommend it as a *cure-all*, although it has been used successfully in the treatment of morning sickness, flooding, suppressed menstruation, dysmenorrhœa, and leucorrhœa, but we do believe it to be unrivalled as a *uterine tonic* to reduce chronic enlargement, to restore relaxed muscles to their normal strength, and to relieve the distressing "bearing down" sensations. That it possesses merit a multitude of those once afflicted bear witness. It will fail, of course, when not prepared from fresh and pure drugs. As a prescription to insure painless, speedy, and safe confinement at full term, it first became popular, and as it was frequently called *Mother's Cordial*, we have, by translation, adopted the name.

Tumors of the womb occupy different positions. They may locate in the substance, or attach to the lining membrane, or occupy the cavity of the organ. In either case the long continued use of the Matrikonine, by keeping up a rigid contraction of the muscular fibres, not only prevents their further growth but has in many instances promoted their absorption; its advantages over the use of the surgeon's knife is apparent, not to speak of the fortunate escape from the dreaded operation.

FEMALE WEAKNESS.

Under this general heading we propose in a brief manner to discuss the conditions, causes and indications for treatment for the maladies we have just described.

The afflicted complain of pain at the top or back of the head, uneasiness and dull pain in the small of the back, and a heavy dragging feeling through the lower abdomen. The head is hot and the feet cold. The appetite is poor, digestion imperfect, nutrition impaired and bowels constipated. The urine is frequently passed and sometimes scalds while escaping. Leucorrhœa attends in most instances. The blood is poor and the muscular system deficient, flabby, and relaxed. They are flat-chested or the breasts are dependent, the abdomen protrudes, the shoulders droop, with a marked depression at the pit of the stomach. The face is pale, the eyes hollow, and dark rings about them. The nervous system suffers; there is languor, restless-



OUTLINE OF FEMALE FORM WITH WEAK MUSCLES AND SYMPTOMS OF PELVIC DISEASE.



OUTLINE OF HEALTHFUL FEMALE FORM.

ness, prostration, and perhaps palpitation. Of course, we do not meet all of these symptoms in any given case, but the most of them usually appear.

The causes are sedentary habits, colds taken at the menstrual period, masturbation, excessive coitus, abortions, too rapid child-bearing, prolonged nursing, excessive household labors coupled with the care of children, and tight lacing. Corsets hinder wholesome exercise and prevent the free play of the internal organs. The muscles waste away and become thin and feeble and are unable to do their proper work. They permit the bowels to gravitate out of their normal position and these become pendulous. The mechanical pressure created by the lacing presses the contents of the abdomen toward the pelvis, and the pelvic contents are crowded down below their natural position. This is the cause of the "pot-bellied" appearance of many fashionable women. For whatever sphere such women may be fit, they are entirely unsuitable for the great functions of womanhood: maternity.

TREATMENT.

All habits and influences which tend to debilitate must be dismissed. Instead, hygienic means must be substituted. These consist of rest, in more senses of the word than one, good food, sunlight, air and dress. Dispensing with corsets, the rubbing and stroking may, and often does, precipitate a crisis. But this is the shadowed vale through which many must pass to reach the health-summits beyond; once passed, the health and strength rapidly improve. In displacements and ulceration it is of no use to rectify position, etc., unless you tone up the system between the menstrual periods, and during the flow, support the nervous system. Matrikonine, or other uterine tonics, will answer this purpose.

In writing upon the cure of metritis, Dr. Storer remarks: "If the woman is left to the unbridled caresses of even a considerate husband, or is allowed to indulge in any of the conjugal indecencies of the present day, preventing impregnation" by various means, "or, that worst measure of all, incomplete intercourse, the practitioner's hands

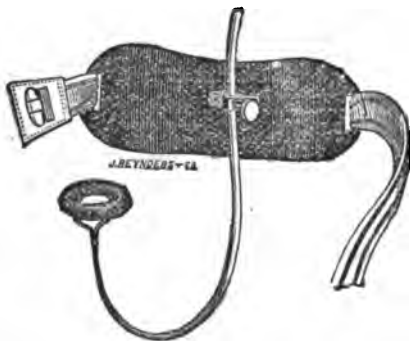
are tied. He cannot expect to effect a cure." This hint to the wise will be sufficient.

Physicians frequently and carelessly perhaps advise childbearing as a cure for "female weakness." This is to be regretted on many accounts; chiefly because to have sound, healthy children, the mother must be sound and healthy. In the later months of pregnancy the womb rests upon the pelvic bones, but this support is only temporary, for after delivery the prolapse is generally aggravated. It consumes from four to six weeks before the womb is degenerated and absorbed sufficiently to resume its previous or healthy proportions, and the mother is unwilling to be confined to the bed for such a long time. If she will do this and nurse her baby, inasmuch as irritation of the breasts promotes absorption of the superfluous tissue in the uterus, benefit may follow such advice.

Pessaries or uterine supports do nothing, or next to nothing, toward removing the *cause* of the difficulties they are expected to meet, even when the results of their use are most satisfactory and complete. Any mode of treatment which shall succeed in restoring the *natural supports* renders these mechanical substitutes unnecessary. The pessary is commonly compared by its advocates to the crutch,



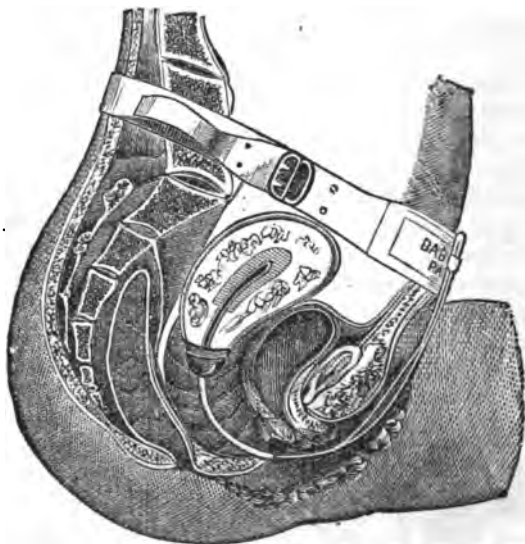
SOFT-RUBBER PESSARY, inflated.



SCANZONI'S SPRING PESSARY.

but is wanting in the principal points of the analogy. The limbs are taxed with supporting the body. The uterus does not support

but is itself supported. Hence the mechanical appliance is not a substitute of function and the disuse of the supporting muscles thus brought about often has the effect noticed with other muscles, weakening and withering. It is reasonable, and facts confirm the position taken, that the muscles must be well nourished by improved circulation of blood and their contractility and activity increased.



BABCOCK'S PESSARY APPLIED.

Whether yours may be one of those rare and exceptional cases in which a pessary is necessary or not, it is your privilege to use the makeshift if you wish; the acknowledged freedom of the individual warrants such a course. As a medical adviser it is our duty to inform you correctly, and this duty we have performed faithfully and conscientiously.

WHITES.—*Leuchorrhœa*.

This is one of the most common of female complaints. To a certain extent it is but an index or symptom of other disorders. A good definition is catarrh of the vagina, or uterus, or both. The symptoms of its presence are, the appearance of mucus in more than ordinary quantities at the vulva, varying in quantity and in quality. The consistency may be watery and colorless, or thick; white, yellow, or green; pasty or stringy. A sense of weight with irritation of the bladder or rectum is felt, with or without pain in the lower part of the abdomen.

Leuchorrhœa is sometimes met with in children. Exclusive of any hereditary taint, it may be caused by the smegma or cheesy substance covering the infant at birth, and which is imperfectly or only partially removed during the first washings. Later it may arise from the confinement of urine which has become decomposed. Not unfrequently, in childhood, it is developed by the presence of foreign bodies which have been introduced by the sufferer.

There is such a wide range in the character of the discharge that description is difficult. It differs in the same individual at different times, from the seat of the catarrh, whether uterine or vaginal, and from the exciting cause. In most cases the lining membrane of these organs is inflamed or congested and thickened. A partly prolapsed womb, irregular menstruation, the pressure of morbid growths, excessive sexual intercourse or childbearing; all cause, prolong and intensify leuchorrhœa. Like all catarrhs it is usually associated with vitiated blood, nervous prostration and general debility. We have seen many cases result directly from a cold; cough, from the violent exercise of the diaphragm, may congest these parts and produce an acute attack. Specific diseases develop virulent leuchorrhœa.

TREATMENT.

It is obvious from the varied nature of the malady and the diversified causes, that only a line of treatment, general in its application, can be attempted. In the first place it is necessary to correct dis-

placement, remove congestion and morbid growths, and regulate menstruation, if any of these affections are present.

When the disease is vaginal, its cure is simple and rapid. Medicated injections, combining an antiseptic and a remedy healing to mucous membranes, is all that is required. Take of the

R.—Sulphate of Zinc,		one dram,
Fluid Extract of Golden Seal,		one ounce,
Glycerine,		one ounce.

Mix.

Put two drams in one pint of warm water and use the full quantity, twice a day. Or the following may be used:

R.—Carbolic Acid, pure,		thirty drops,
Tincture of Opium,		four drams,
Glycerine,		three ounces,
Water,		three ounces.

Mix with one, two or three parts of lukewarm water, bulk for bulk. The amount added depends upon whether the lining of the mucous membrane is in a more or less raw or denuded condition. The glycerine at first increases the watery discharge.

All injections used in treating leucorrhœa should be administered with a syringe, throwing a continuous stream. Those wishing to economize should have the liquid passing from the body fall so as to feed the syringe, thus permitting so small a quantity as a pint to answer as well as many times the same. To be effective, the cleansing must be thorough, never failing to reach every point of the diseased surface.

An instrument has been invented by Dr. Griswold which we have employed with remarkable results and which we consider indispensable to the rational and rapid cure of leucorrhœa. It meets a want long felt by the profession in treating this affection, ulceration of the neck of the womb, passive hemorrhages, and ulcers of any kind upon the vaginal walls. As an attachment to the ordinary family syringe, to be employed after menstruation, it has no rival in point



Fig. 1.



Fig. 2.

common syringes now in use. For its use no explicit instructions are necessary.

of cleanliness. Both the profession and public appreciate it as soon as exhibited, and if we could spare the space, almost numberless testimonials in its favor might be introduced.

GRISWOLD'S IRRIGATOR consists of a cage-like structure made of non-corrosive metal (see C, Fig. 1) with longitudinal ribs, *c, c, c, c*, converging at one end to a common centre. The object of the end is facility in introduction, and of the ribs to put the mucous membrane of the vaginal canal upon the stretch, thus exposing the whole surface by smoothing and extending any and all folds of tissue. These ribs, *c, c, c, c*, are made of cylindric wire of suitable diameter and are attached to braces, one of which is represented in Fig. 2. These braces have a circular opening through which the nozzle of the syringe A, passes. In Fig. 1 it is represented in place. There are also notches in the brace; see *f, f*, Fig. 2, which permits the free outflow of liquids that have been thrown through the nozzle and of all mucus and other impurities. The nozzle A is perforated along its inner half with minute holes, from which the liquid passes directly to the membrane. The outer end is supplied with a screw-thread by which it can be attached to a tube and compressible bulb, see B, Fig. 3, or to most of the

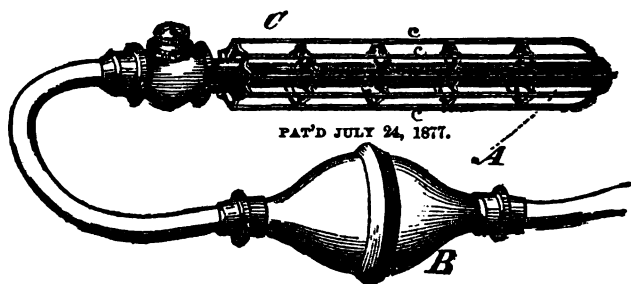


Fig. 8.

In reviewing the difficulties experienced in our practice with other syringes, we find them entirely overcome in employing the Irrigator. The objection to most syringes is that independently of the remedy employed, the liquid touches but comparatively little of the membrane and a gulley or valley is formed and the fluid returns by this channel. Neither the piston nor fountain syringes throw the medication into the folds of the vagina, the very place where the disease is most firmly seated. Nor does the pipe distend the canal sufficiently. In those instruments in which it does, provision for the return flow is deficient. The Irrigator cleanses thoroughly; other methods do not do this much. Some have square ends and hence are difficult to put in place, others pinch or otherwise do injury. There are none of these objections to the instrument recommended. The sulphate of zinc is the remedy generally employed, but this does harm because it coagulates the albumen which exists to so large an extent in leucorrhoeal discharges. With the Irrigator, if such concretions form, they are promptly expelled. In some females the orifice of the vagina is small and so constructed that part of the fluid injected is retained, but with the Irrigator the orifice is opened to exactly the same extent as the internal mucous membrane, making a continuous pipe of the same diameter, with free inlet and outlet.

Some physicians object to local treatment, claiming that it will not overcome a disease which is partly constitutional. This may be

based entirely upon theoretical grounds, but to such we would reply that part of the remedy is absorbed. This is all that can be expected of it if taken into the stomach; in both cases the general effect depends upon absorption. Even if there be an uncertainty about that, of this fact we have ample proof—the Irrigator CURE.

The fluid should always be *warm* and in vaginitis, *hot*. Cold water, used by the common syringes, sometimes causes uterine colic.

Uterine leucorrhœa is much more difficult to treat, and we doubt if any one could succeed in their attempts at self-cure. This species, in most cases, develops a stringy, thickish or membranous discharge. The best local treatment consists in swabbing out the uterine cavity with cotton-wool previously soaked in a strong solution of carbolic acid and, to facilitate the operation, wound around a probe. This is repeated every three or four days. Another plan is to make suppositories of

R—Extract of Belladonna,	.	.	.	.	one part,
Nitrate of Silver crystals,	.	.	.	.	two parts,
Simple Cerate,	.	.	.	.	two parts.

Mix.

Introduce a tube every eight or nine days, and in the course of two or three months the discharge and its attendant dysmenorrhœa will cease.

In treating this disease it is necessary to adopt every means that will benefit the general health, such as attention to diet, cleanliness, exercise, and particularly, regular evacuations of the bowels and the bladder. In order that a cure may be permanent, tonics both constitutional and uterine should be continued for some time after recovery is supposed to be complete. For this purpose we recommend the use of Matrikonine or some similar preparation.

MILK LEG, WHITE SWELLING.—*Phlegmatia Dolens*.

The exact cause of this disorder is not known, but we agree in opinion with those who believe it to be due to an inflammation of

the veins (phlebitis) of the leg. From pressure above, the blood is unable to flow, the vein enlarges, becomes weak, and a dropsical effusion takes place. From one to three weeks after delivery there is a chill, and one of the legs (sel lom both) becomes tender, painful, and begins to swell. The larger veins are distended and tortuous and feel hard and knotted. Soon the limb swells, becomes white, tense and shining, and may be hot, but is sometimes cold. After a few days the hardness diminishes and the limb remains puffy and dropsical for an indefinite period. Sores and abscesses may follow.

TREATMENT.

As soon as pain is noticed in the leg give a mild and unirritating cathartic such as calcined magnesia in teaspoonful doses in water or milk until the motions are free and watery. This a good anti-dropsical treatment also, and in a measure anticipates the result of the disease. If feverish,

R.—Tincture of Veratrum Viride, . . . forty drops,
 Water, ... twelve spoonfuls,
Mix.

Take a spoonful every four hours. Two hours after each dose take a teaspoonful of

R.—Tincture of Colchicum seeds, . . . four drams,
 Spirits of Nitre, ... three drams,
 Acetate of Potash, ... two drams,
 Essence of Wintergreen, ... one dram,
 Water, ... three ounces
Mix

If there is no fever, give this every three hours. To subdue the pain and inflammation in the leg, bathe gently and frequently with this lotion:

R.—Tincture of Aconite root,
 Tincture of Arnica flowers,
 Laudanum, ... in equal parts.
Mix.

Before attempting to do housework or walk about, the whole leg, from the toes to the body, should be carefully and snugly bandaged with a long strip of flannel carefully overlapping its edge each time it encircles the leg. If it becomes loose it should be re-applied. When the inflammation has departed a compress may be used of flannel wet in a solution of sulphate of iron, one ounce, and hot water, one pint, placed over the vein as hot as can be borne.

DISEASES OF THE BREASTS.

Mothers often suffer much from the heat, pain and swelling of the breasts while nursing, and soreness of the nipples. Not unfrequently the glands "cake and gather," terminating in abscesses and fistulæ, a deplorable condition, undermining the health of the mother by the pain, fever and loss of sleep. The child suffers also from the deterioration in the quality of the milk and must be weaned peremptorily, and in the first months of its life, to prolong its existence. So unfortunate a disaster and very much of the trouble, distress and suffering from inflamed breasts, we know can be averted by judicious treatment. These means we will indicate under appropriate headings.

INFLAMMATION OF THE BREASTS.—*Mastitis.*

For several days after delivery there is some irritation and feverishness of the system attending the appearance of the milk. This is popularly known as *Milk Fever*. Sometimes there is chilliness and headache, with heat, tenderness and fullness of the breasts. We never have trouble here, for the veratrum, which we continue after childbirth to overcome after-pains, is the best anti-fever remedy known. Since its employment we have lost sight of milk fever altogether. It is prescribed as follows:

R.—Tincture of Veratrum Viride, . fifteen to thirty drops,
 Water, ... eight teaspoonfuls.

Mix.

Take a teaspoonful every two or three hours. Do not disturb, if sleeping. If it has not been used previously, it may be administered on the third day, or when the feverish symptoms appear.

When inflammation begins in the breast, for it seldom appears in both at the same time, the milk vessels (ducts) will be felt distended, hard and knotty. This is the "caking" and "ague," as called by nurses. It is accompanied by some pain and must receive immediate care. Commonly a proper support to the breast is wanting. This should be supplied by a closely fitting under-waist made of stout material, or by a sling passing over the shoulder. Between this and the breast insert a narrow piece of cotton-flannel or old cotton wet with

R.—Tincture of Arnica flowers,
 Tincture of Aconite root,
 Laudanum. equal parts.

Mix.

Care should be exercised not to get the liniment on the nipple, for the aconite is poisonous. If it were not for the fact that handling increases the inflammation of the breast, bathing would be preferable. If the compress is kept wet all the symptoms disappear in twenty-four hours. The breast should then be supported by adhesive strips passing under the gland and secured to the chest above.

BROKEN BREAST, MILK ABSCESS, MAMMARY ABSCESS.—
Mastodynia Apostematosa.

From mismanagement or carelessness the inflammation often progresses until an abscess (boil) forms. The pain is then severe, extending, perhaps, to the arm; the breast is exceedingly tender, every motion of the body increases the pain and throbbing ensues. Support is now more necessary than ever. The liniment should be continually applied. Internally should be given

R.—Tincture of Poke Root, . . . one dram,
 Essence of Wintergreen, . . . ten drops,
 Water, . . . four ounces.

Mix.

Take a teaspoonful every two hours. Drink but little fluid and keep the breast partially empty by occasionally drawing some of the



BREAST PUMP.

milk with a breast pump. We consider Mullan's the best. If it is considered advisable to dry the breast, teaspoonful doses of calcined magnesia should be given every three or four hours until the bowels move freely with copious watery discharges. Paint the breast with

R.—Extract of Belladonna, . . . two drams,
 Water, . . . one ounce.

Mix.

And do not nurse the child while this is applied. This treatment is successful in *weaning*, or, in case it is thought best not to nurse the infant. If the abscess cannot be aborted by these means the treatment may be changed so as to hasten its "pointing," or it may be lanced. A spray of chloroform may be directed to the softened spot, which produces insensibility, when it may be opened without pain. This affords great relief. Keep up the use of the magnesia and the application of the belladonna. Support the breast, and occasionally empty it with the pump.

We have just alluded to the treatment to be used in drying the breast in weaning, or when it is more desirable, in cases of stillbirth. It seems well to say a word here in respect to the opposite condition

insufficiency of milk. The milk can be increased in amount by heat and diet. Flannels wrung out of hot water should be applied to the breasts and covered with oil silk or a hot bowl well fitting may be covered over the gland and be allowed to remain until cool: then heat and reapply. The diet should be mostly fluid and consist of meat, eggs and milk. Beef tea is proper. We prefer soft custard made in this way: Bring a pint of milk to the boiling point, beat two eggs with sugar and stir in. Take from the stove in one minute and when cool, flavor.

SORE NIPPLES.

Much of the trouble caused by sore nipple may be prevented by hardening them during the last weeks of pregnancy by rubbing and by bathing with tannin and water, or by frequent wetting with tannin and glycerine made into a thick paste. When they become chapped and sore while nursing, they are difficult to cure, because of the suction and abrasion of the child's mouth and over-distention of the milk vessels, for the mother favors this breast and it is seldom if ever completely emptied. Calcined magnesia makes a good application and is harmless to the child. Tannin may be sprinkled on the sore after the child nurses, but must be washed off before using again. Sore nipples often produce *thrush* in the infant; in such a case powdered borax is the remedy; both for the nipple and for the child's mouth.

CHANGE OF LIFE, TURN OF LIFE, CRITICAL TIME.—*Menopausis.*

In temperate climates, most women cease to menstruate at the age of forty-five; the next most frequent time being at or during the fiftieth year. The critical period may be called the time from which irregularities begin to the time of perfect or permanent restoration of health. "The critical nature of a period," remarks Dr. Tilt, "is shown by its effects on the health in ensuing years. Thus puberty is not only the crisis of most of the complaints of the preceding

epochs, but it determines the health of the subsequent period for good or evil; in like manner, the change of life not only terminates critically many complaints of the preceding years, but it has a decisive action upon the state of health during the whole subsequent period of life; so much so, that from the manner in which this crisis is accomplished, I believe it possible to predict whether, in after-life, the health will be good or bad. Fifty-three women in whom there had been no menstrual flow for five years, and whose health had been habitually bad, spoke of their great additional strength of constitution and this result may be taken as a rule which harmonizes with the popular belief. It is shown by the greater longevity of women, by their being less liable to sudden death and by their general immunity from disease.

"Those who deny that the change of life is a critical period, argue as if *critical* meant *fatal*. In medical language, crisis means a sudden change for the better or the worse, leading as often to recovery as to death. Instead of flowing on in smooth tranquillity from the cradle to the grave, the stream of life is marked by rapids, which have been called critical, metamorphic or developmental epochs, and during which an unusual predominance is acquired by one or by several of the organs which together form the human frame. The object of each successive critical readjustment of our frame is, to insure the greatest possible amount of health consistent with each subsequent period of life."

"It is not unusual with women," states Sir C. M. Clarke, "to refer all their extraordinary sensations to 'the change of life,' and to consider that, when they have thus accounted for their diseases, they have at the same time cured them; and in this most medical men, judging at least from their practice, seem to be of the same opinion."

"The complaints," says Dr. Meigs, "which women at the change of life often make, are frequently hushed with the unsatisfactory reply that such complaints are owing to the change of life and are likely to cease whenever the change shall become complete. A physician has no moral right by his opinion to put to sleep the anxieties

of his patient and to save himself the trouble of thinking by so concise and unphilosophical a mode of proceeding. Whenever, therefore, a female at this period, which is universally admitted to be a critical and dangerous time for her, comes to complain of symptoms referable to some morbid condition of the reproductive tissues, it is clearly our duty to give a considerate attention to her case and not to dismiss her until our judgment should be fully satisfied as to the therapeutical or hygienical indications of the case."

We have introduced these few paragraphs partly as being the embodiment of our sentiments and partly to call attention to the fact that the better the health while passing through this period the better it will be during the remainder of life. From what has been said it may be concluded that all symptoms need attention and that however trifling they may seem they have an important bearing upon longevity. It is not intended at this place to go into full particulars. Valuable hints are scattered throughout this work and many of the ailments of this transitional epoch are described and the treatment given. Space will not permit us to review or enter into more minute details. This whole matter and some others which we have felt compelled to introduce into this volume would be more fittingly considered in a book devoted exclusively to the diseases of women; and it is proposed by the author, as soon as other pressing matters will permit, to issue a treatise to women about themselves.

CLASS V.**BONE, MUSCLE AND SKIN DISEASES.**

ORDER I.—SPINAL DISEASES.

SPINAL IRRITATION.

The spinal nerves exercise such an influence over respiration, circulation, digestion, micturation, defecation, and other muscular actions that it is remarkable that their irritation does not oftener receive attention and investigation. Through this agency palpitation or asthma attend dyspepsia; and dyspepsia, uterine diseases. Many diseases have their origin in irritation of the spinal nerves; this irritation once allayed the disease disappears. We have in mind a case of threatened abortion with powerful uterine contractions set up by inflammation in other organs and the consequent reflex irritation of these nerves. We do not now consider those cases of anæmia with pale and bloodless skin, in which the system is insufficiently nourished and which manifests itself in chorea and similar affections. We confine our remarks to cases in which there is *tenderness of the spine*. This is easily ascertained by pressing the finger-tips into the flesh between the ribs close to and on each side of the spinal column. Places will be found in which the least pressure causes the person to flinch and recoil from the touch. Sometimes resting against the back of a chair will discover the sensitive spot; at others, the pressure of the clothing may detect the location.

TREATMENT.

It is wise to examine the spine in all cases of nervous irritation or of diseases accompanied with tremor or spasmodic action either of the whole system or of one of its organs. The successful treatment of such diseases will be tedious at best unless this irritability of the spinal nerves is removed. Rapid recovery will, in all instances, follow the local treatment. We want a benumber and anodyne. This is furnished by

R.—Tincture of Aconite root,
 Tincture of Arnica flowers,
 Laudanum, ... equal parts. Mix.

Apply upon a disk of flannel covered with oil-silk or sheet-rubber, and secure with a pad and bandage. Wet as frequently as necessary. In case of inflammation or congestion about the spine, give internally iodide of potassium in five or ten grain doses, three times a day. This remedy has a special tonic effect upon those tissues of the body similar to the nerve sheaths. This treatment does not interfere with whatever means may be employed to remove the *cause* of the irritation.

CURVATURE OF THE SPINE, HUMP.

The column of bones constituting the spine is naturally arranged in slight but graceful curves to support the head upon a spring and prevent concussion of the brain in walking, jumping, etc. From impaired nutrition, as in scrofula, rickets, and similar diseases, from pressure and remaining long in constrained postures, these curves are augmented or distorted. *Hump* is of this nature, and the deformed are called humpback. This is generally forward or backward.

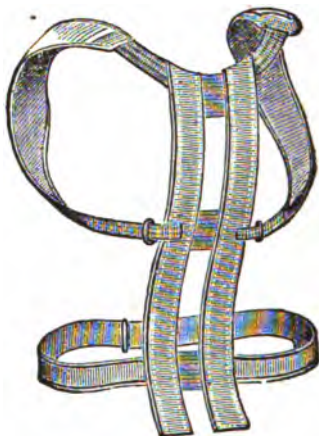
The Hindoo girls are gracefully formed. From their earliest childhood they are accustomed to carry burdens on their heads. The water for family use is always brought by the girls in earthen jars, carefully poised in this way. This exercise is said to strengthen the muscles of the back while the chest is thrown forward. No crooked

backs are seen in Hindostan. Dr. Henry Spry says, that "this exercise of carrying small vessels of water on the head might be advantageously introduced into our boarding schools and private families, and that it might supersede the present machinery of dumb-bells, black-boards, skipping ropes, etc. The young lady ought to be taught to carry the jar as these Hindoo women do, without ever touching it with the hands." The same practice of carrying water leads to precisely the same results in the south of Spain and in the south of Italy, as in India. A Neapolitan female peasant will carry on the head a pail full of water to the very brim, over a rough road, and not spill a drop of it: and the acquisition of this art or knack gives her the same erect and elastic gait, and the same expanded chest and well-formed back and shoulders.

When the bones are diseased and the cushions of cartilage between them ulcerate, with a loss of motion of the lower limbs, we have Pott's disease, so called from his able description of it. A few of the spinal bones will be found displaced backward and the projection is sensitive. The treatment is by the use of those remedies that will improve digestion, tone the system, by exercise and by surgical appliances. The mechanical apparatus, to be perfect, must take the weight of the head and shoulders from the spine, and at the same time brace the angular projection.

The most common form is lateral curvature, from side to side, imperfectly represented by the letter *S*. This is not so much due to any disease of the bones as to debility and relaxation of the cartilages and muscles. Girls are the most common sufferers, particularly the sedentary, and those accustomed to luxury and indolence. The awkward postures assumed in learning to read and write, carrying heavy weights on one arm and misses' corsets, are prolific causes. The first noticeable feature is a raised shoulder. If the curvature is great, the internal organs are displaced and crowded, and become diseased. Consumption not unfrequently follows. The treatment consists of proper diet, exercise and mechanical apparatus. In spinal

deformities the advice of a skilled surgeon should be promptly sought and carefully followed.



SHOULDER BRACE, STEEL-SPRING BACK.

BACKACHE, LAME BACK.

Very many diseases and diseased conditions occasion a dull heavy pain in the back. It may be near by as in spinal disease, or rheumatism of the muscles of the back, but more commonly it is distant, as in dyspepsia and womb diseases. The kidneys are not unfrequently disordered. In fevers the skin is dry and inactive and these organs are compelled to do double duty to carry away the impurities in the blood, and as a result, the back aches. This is the case also when over stimulated by alcoholic liquors, tobacco, etc. Colds contract the skin, irritate the kidneys and produce this affection. In the majority of cases, however, it is a symptom of nervous exhaustion, increasing toward the close of the day, as the body becomes tired. This may arise from anxiety, brain-work, excitement, marital excesses or sedentary habits with deficient exercise.

SIDEACHE.

Sideache may have several causes, as rheumatism, inflammation or congestion of the liver, spleen or lungs. If the pain is in the upper part of the chest it is likely to be from the lungs. If on the right side low down, then probably the liver is the cause, and if on the left side it may be the spleen. It may also be caused by sedentary habits, exhaustion or sprain.

TREATMENT.

The best remedies are the Turkish or spirit-vapor bath, with friction and moderate gentle exercise, the very best care and training of the parts affected and medication directed to the organ affected.

KNEE-JOINT DISEASE, SWELLING OF THE KNEE.

From sprain or other injury to the knee and from inflammatory diseases of the structures, this joint is liable to swell and become dropsical, or otherwise impair walking.

TREATMENT.

No matter of how long standing, begin treatment at once by a poultice of lobelia leaves and hot water. Envelop the whole joint and cover up well with flannels. A spirit-vapor bath with the rubber bag and alcohol is next in order. This should be prolonged for an hour and followed with thorough washing with soap and water and hard friction over all the body. Make the whole surface glow. Remove the pack and have the knee and whole leg rubbed with the hand for fifteen minutes. Then oil the leg, using the antiseptic balsam or lard, and rub for another quarter-hour. A double thickness of flannel may then be sprinkled with

R.—Olive Oil,

Sassafras Oil,

Aqua Ammonia,

Camphor Liniment, of each one half ounce.

Mix.

And bound about the joint. Repeated for two or three days, this plan of treatment will cure most every swelling of the knee.

ORDER II. DISEASES OF THE SKIN.

The skin is composed of a variety of parts or organs: (1) the epidermis or horny layer; (2) the corium or true skin; (3) the loose tissue, usually containing fat, which lies beneath the true skin; (4) the nerves; (5) the vessels; (6) the sweat and oil glands; (7) the hair and nails, usually called the appendages.

The Epidermis, Scarf-skin, or Horny Layer.—When a part of the surface of the body, e. g., the palm of the hand, is blistered, two layers of the skin are separated by a quantity of watery fluid. The layer which is raised up is the scarf-skin. It is not at all sensitive, and may be cut, just like the hair and nails, without pain. The epidermis grows on the surface of the true skin, and is moulded over all its inequalities; under this is the coloring matter, upon which depends the varying complexions of individuals and races. The most powerful single cause affecting the amount of color is light, the intenser the light, the deeper the color. Many people have freckles in summer who appear to have none in winter.

The Corium or True Skin.—This is a tough elastic structure, made up chiefly of bundles of fibres, which interlace in all directions. The deeper parts are loose and, as a rule, contain fat; the parts nearer to the epidermis are extremely dense. The surface of the true skin is studded with myriads of very small pointed projections called *papillæ*, whose average length is about one-hundredth of an inch. It is to these papillæ that the sensitiveness of the skin, as an organ of touch, is chiefly due. They are most numerous on the palms of the hands, on the fingers, and on the soles of the feet, where they are arranged in lines and curves, hence the characteristic appearance of

the skin in those parts. Each papilla is supplied with blood by minute arteries, and in most of them a little nerve-twigg terminates. Although the papillæ are the organs of touch, they are not intended to be brought directly in contact with external objects. When this is done, as when the epidermis is removed, the result is merely a painful sensation. The papillæ require to be covered with a certain thickness of non-sensitive horny layer.

In the substance of the true skin, and even deeper, the various glands and the hair follicles are lodged.

The Sweat Glands.—Over the entire surface of the body is a vast number of very minute openings or *pores*. They are largest and most numerous on the palms of the hands, and the soles of the feet, where they can be seen with the naked eye. On other parts of the body they are smaller and less numerous. These pores are the openings by which the secretion of the sweat glands is thrown out. The sweat glands are situated in the deeper layers of the skin, chiefly amidst the sub-cutaneous fat. They consist mainly of a coil or tube in the form of a ball, with a duct or drain leading from it to the surface. Each gland, taken by itself, is small and unimportant, but, taken together, they form an organ of the greatest consequence in the animal economy. It has been estimated that there are, on the average, twenty-eight hundred pores of these glands to the square inch, and that the total length of the tubes in the body amounts to nearly twenty-eight miles. They remove from the system about twenty ounces of waste matter every twenty-four hours.

The Oil Glands.—Besides the sweat glands, the skin contains another kind of gland for secreting an oil or ointment by which it is kept soft and flexible. These are the sebaceous or oil glands. They are distributed over the surface of the body, but are most numerous in parts largely supplied with hairs. These glands are composed of a collection of pouches filled with a whitish substance like a soft ointment and communicate with the surface by a duct or drain which opens most frequently into the cavity or follicle in which a hair grows.

The Hair and Nails.—Both these structures are produced by a modi-

fied growth of the scarf-skin. The hair consists of an outer covering of scales which overlap each other, like the slates on a house, a middle layer of fibres like a piece of wood, and a substance called the pith in the centre.

PIMPLES.

The oily secretion is contained in the oil gland just as the soft scarf-skin is formed on the surface of the true skin. First of all, soft round cells are formed, containing a large quantity of oil. These are pushed from the lining of the wall of the gland toward the middle of its cavity. Here they burst, the oil is set free, and the minute pouches collapse into scales. By the continuous formation of other cells behind it, the oily substance is driven along the duct and appears on the surface. Sometimes, in certain states of health, the sebaceous substance becomes too dry to flow out. It then remains in the gland, gradually distending it, with or without inflammation. When there is no inflammation, the plug of ointment ultimately shows itself on the surface, and takes on a black head from the smoke and dirt in the air. This is the so-called "grub" which may be squeezed out between the finger-nails. When the retentions of the contents of the follicle is accompanied by inflammation, the result is a crop of pimples, "spotted acne" about the nose and forehead, and on other parts where the oil glands are numerous.

Pimples on the Face.—Inflammation of the oil tubes and glands, extending more or less to the neighboring skin, gives rise to a well-known eruption of the forehead, face, chest, and back called *acne*. When the pimples have the black head of a "grub" at the point, they constitute *spotted acne*. There is a variety which affects the nose and its immediate vicinity, and is usually associated with excessive indulgence in alcoholic stimulants, although it may, and often does, arise from other causes in the most abstemious. It always annoys the afflicted, and may be the cause of serious loss in business or otherwise, owing to the prejudice which it excites. This is always an obstinate complaint, but may be improved by strict attention to the

various functions of the body and by fresh air and exercise. To get rid of the unsightly appearance something more is necessary. The "grubs" should be squeezed out. This can be done, as a rule, by the finger nails, before the glass. During puberty they develop from reflex irritation of the genitals. There are sebaceous glands in the throat which also become affected and change the voice. This change, the sore throat and the pimples are important in exposing the more than probable origin. When this fact becomes better known the duties of parents and instructors will be more clear and obligatory, and its criminal non-performance more flagitious.

Wens. When the secretion is completely retained, and prevented from coming to the surface, which rarely happens, the oil gland and its contents form a kind of tumor, which is seen most frequently on the scalp. These are the "wens" which are sometimes allowed to grow to such an enormous size. They are easily dealt with by the surgeon, and should always be removed.

Offensive Odors. There is in the perspiration an odorous substance, which in people of cleanly habits is not disagreeable, but which is very apt, especially in those of sedentary habits, to become offensive; and people who live together, and value one another's respect and affection, cannot afford to run the risk of becoming objects of mutual disgust.

CAUSES OF SKIN DISEASES.

We have seen that the skin is the organ of sensibility and touch, besides being an integument or covering to the parts that lie underneath. It has a wonderfully complicated structure, owing to the arrangement, in varying proportions, of scarf-skin, true-skin, fat and cellular tissue, nerves, blood-vessels, sweat and oil glands, hair and nails. This organ has important work to do in performing its part among those processes which taken together we call the life of the body; and, like all hard-working and complicated machines, it is liable to get out of order. The derangement from which it suffers

may be the result of unhealthy action of some internal organ or organs, or they may arise in itself from external injury or irritation.

I. Among the most commonly recognized of the internal or constitutional causes of diseases of the skin are:—1. The transmission from parent to child of a tendency to certain forms of disease. This is well seen in the infant children of parents who have suffered, one or both of them, from a common contagious disease, unless the disease has been completely eradicated. When we consider how exactly the complexion and the texture of the skin in the parent is sometimes copied in the child, we need not be surprised at the transmission of such diseased conditions, nor that here also the sins of the fathers are seen to be visited upon the children.

2. Some kinds of food have a tendency to produce diseases of the skin. For example, all liquors containing alcohol, when taken in excess, produce a change in the texture of the skin in general, and on that of the nose and contiguous parts in particular. Some kinds of shell-fish and fruit produce nettle-rash. And there can be no doubt that many other substances, taken as food and drink, although they do not act in such a marked manner as those just mentioned do, in course of time, also produce their deleterious effects upon the skin through internal organs.

3. Temporary derangement and actual organic disease of internal organs, are the chief of the internal causes of disease of the skin. The changes in the skin and the internal troubles may arise from the same cause, or they may react upon one another. The organs whose derangement especially incite or intensify diseases of the skin are the *stomach*, the *liver*, and the *kidneys*. As regards the *stomach*, if there is an excess of acid secretion, or when there is some other change from the standard of health, then, owing to the absorption of acrid substances, inflammations and congestions are produced or existing ones intensified. This fact is, no doubt, at the root of the prevalence of skin diseases among children in their first years. The anxiety to give sufficient nourishment leads to a habit of constant stuffing, so that quantities of food are supplied out of all proportion

to the requirements of the system, or the digestive power of any normal stomach and bowels; consequently, a large amount of only partially digested aliment is absorbed, leading to internal derangements in the first place, and then to skin affections. The liver and kidneys both bear much the same relation to diseases of the skin. Each has its functions to perform in withdrawing from the blood certain waste matters which, if allowed to remain in the circulation to any extent, produce marked symptoms of disease. It is found, for instance, that in the wet tetter (eczema) of children the blood contains bile products, though not to such an extent as to give rise to the jaundiced appearance; and the retention in the blood of certain waste products which it is the function of the kidneys to remove, gives rise to some of the skin diseases, particularly to nettle-rash and circumscribed congestions.

II. A great authority on diseases of the skin, has said: "Much more potent in the generation of diseases of the skin than the internal causes, which have their seat in the organism itself, are those agencies which are external to the body." Of these agencies, the following are the most active:

1. "Want of cleanness and general neglect of the skin amongst the children of the poorer classes is a most fertile source of skin disease. We meet with examples every day of eczema and other eruptions of the scalp, mainly produced by neglect, accumulated dirt, and pent-up secretions."

2. Irritating applications to the skin. This may include drugs, soaps, and the so-called "salves," many of which are made with rancid fat in some form or other. Sulphur is frequently the cause of skin diseases when it has been employed as a remedy for them. Then there are the irritating substances used in various trades, which produce the so-called bakers' itch and grocers' itch.

3. Animal and vegetable parasites are among the common causes of skin diseases, e. g., the itch-mite which produces the common itch, and the fungus which gives rise to one of the forms of so-called ring-worm.

4. Changes of temperature also produce diseases of the skin, well illustrated by chapped hands and chilblains.

Our skin then becomes diseased chiefly from injury or irritation applied directly to it, as also owing to disease in some internal organ, with all of which it is closely connected, although with some more closely than others. Yet, one of the commonest of formulas by which a Bildad, the Shuite, seeks to comfort a Job of our acquaintance who has been smitten with "sore boils," is that "*It is better out than in.*" What "*it*" may be he does not very precisely state, but we may suppose he alludes to some poison in the blood whose evil workings are less likely to lead to serious results in the light of day, than if wrought in the dark unknown of the inward parts. There is, as we have seen, a "soul of truth" in this for the most part erroneous maxim, but a very weak, attenuated soul indeed—strong enough, however, to animate a vast body of injurious practices. One often sees little children who have suffered for weeks from some of those frightfully itchy tetter, the result, almost invariably, of some error of diet or external irritant, while there has been a complete neglect of all means of remedy, just because "*it is better out than in,*" or "*it's only teething.*" But one of the absurdest of all the applications of this maxim is to the cases in which an eruption has been produced by the voluntary use of a known irritating substance. It is a well-known fact, that if you apply an irritant to the skin an eruption will follow. Even pure water, if applied pretty constantly to a part, will give rise to a crop of watery and mattery pimples. It is this fact, taken along with erroneous notions concerning the functions of the skin, that appears to have given rise to the most irrational of all the forms of the so-called "hydropathic treatment" of disease. Some people, by the use of waterproof clothing, to prevent evaporation, actually submit to the constant contact of a stratum of water or of wet clothes to the skin until a copious eruption is produced, and then they point with satisfaction to the rather loathsome result, convinced that they must be better, because "*if it had not been in, it would not have come out.*" The fact is they have merely employed a mechani-

cal irritant to a sensitive organ of the body, and produced the injury which was to be expected. They might as well have scratched themselves until the same result was obtained.

The diseases of the skin are too numerous to describe or even mention. We can give space to but few and only point out a general line of treatment.

Erythema is simply a reddish blush of the surface resembling the mark left by a blow with a whip. It is significant of indigestion in children.

Roseola, or rose rash, is a reddish blush more extensive than the other, appears in circular patches on the face, neck and arms. The color may deepen or suddenly disappear. Some name it false measles.

Urticaria, nettle-rash, teething-rash, hives, prickly-heat, red-gum, white-gum, and milk-spots, are all about one and the same thing. There is a reddish blush with white or red points or elevations thickly studding it, or the red may be confined to the base of each spot.

These three diseases are chiefly met in children, but if in adults, they indicate internal irritation most commonly from the quality of the food or its imperfect digestion. They are accompanied with intolerable itching, particularly if the person is warm, and this constitutes the only symptom demanding attention. The diet should be plain and the meals light. Give small doses of calcined magnesia at night and bathe with soda and water. If the skin is broken by scratching, apply antiseptic ointment.

Most skin diseases develop pimples or vesicles. These are divided into watery, mattery, dry and scaly. We will notice them in the order named.

Scabies, itch, bakers' itch, barbers' itch, grocers' itch; etc. These have the watery pimples and attack the hands and the web between the fingers principally. Barbers' Itch is seated on the chin and lips. Itch follows the handling of irritating substances and the introduction of an insect of microscopical proportions. It is transmissible.

TREATMENT. With the destruction of the parasitic animal the disease disappears. Cleanse and soften the skin thoroughly with soap and warm water. Then rub in and keep the parts wet with

R.—Carbolic acid, ... thirty drops,
Glycerine, ... two ounces.

Mix.

In barbers' itch it may be best to remove the hair. This can be done without pain by whitening or freezing the part with a spray of ether or chloroform. The hairs may then be grasped singly with the forceps near the skin and extracted. It simplifies the process to cut the hair to the length of a quarter of an inch.

Herpes, tetter, shingles, ringworm. We have heard other forms of skin disease called ringworm; we have also heard herpes called salt-rheum. It is not to be expected that the people would agree when physicians differ sometimes on these points, so various are the presentations. In herpes the watery pimples appear on an inflamed surface in distinct clusters. Their common seat is the back of the neck or the waist. They spread or appear in successive crops. Shingles about the waist are dreaded, the popular belief being that if they meet around the body, death is certain. This is an error. The patient is feverish and has pain in the abdomen. Locally apply the carbolic acid lotion just given, adding four ounces of water; internally a cathartic of calcined magnesia and the Queen's Root syrup. In ringworm the pimples appear united in a ring or in rings, one within the other, but not touching. Brush with spirits of turpentine.

Eczema, moist tetter, milk crust, scalled head. Here we have little watery vesicles closely crowded together. The fluid contents escapes and forms thin yellow or green scabs. In the hair these scabs hold firmly and in an attempt to remove them while dry, the hair is uprooted. In case of crusts, moisten with glycerine and keep washed with castile soap and water. Keep the bowels soluble with calcined magnesia. If the sores are wet with a mixture of tannin and

glycerine it will allay the itching. Long standing cases need medical advice.

Pemphigus, watery blebs. These are large blisters, come on any part of the surface, have red edges and are separated by healthy skin. Blebs sometimes matterate, crust over and ulcerate. It is then named *Rupia*.

Pustules or mattery pimples are distinguished from the watery variety by the fact that they contain PUS, a yellowish-white fluid.

Impetigo, running or crusted tetter. This attacks all ages, but chiefly children. The vesicles are small and crowded together as in eczema, but are yellowish and upon an inflamed base. Sometimes the base has the appearance of erysipelas. Yellow or greenish crusts form, and if removed while scratching, soon re-form. When of long standing no traces of the original pustules are left.

TREATMENT. Keep the part well cleaned and soft, and use the following lotion :

R.—Carbolic acid,	.	.	.	.	.	one dram,
Acetic acid,	.	.	.	.	.	two drams,
Glycerine,	.	.	.	.	.	four drams,
Water,	.	.	.	.	.	eight ounces.

Mix.

Use as a wash three or four times a day. Remedies for improving the blood are advantageous and often necessary.

Ecthyma or papulous scall, closely resembles pemphigus in size, general shape and distribution, but they are pustulous and the bases are inflamed. Greenish brown crusts soon form and closely adhere to the skin. Attention to cleanliness, diet, and the removal of organic or constitutional diseases constitutes the treatment.

The papulose class is that distinguished by dry pimples. The elevations contain no fluid. Red gum is an example. They are noted for their intolerable itching. In *Prurigo* the eruption is not very distinct, but the smarting, tingling and prickling is very severe. Many times it attacks the vulva of the female and scrotum of the male. It is often

obstinate of itself, but is aggravated by cutting the flesh with the finger-nail, by irritating discharges and by complication with eczema or erysipelas. It occurs among women that are *enciente* or precedes the menstrual period. Heat increases it and cold allays the itching, but only temporarily. In some cases a solution of sulphurous acid in water, as much as it will dissolve, makes a kind lotion. A prescription more popular among physicians is the following :

R.—Powdered Borax, ... one-half ounce,
 Morphine, ... ten grains,
 Carbolic acid, ... thirty drops,
 Rose water, ... , one-half pint.

Mix.

Bathe three times a day and allow to dry on. During the intervals powder with starch.

In *Lachen*, the points are red or purplish and may occupy a small space inflamed and well defined, may appear in patches or cover the whole surface. It occurs most frequently in the aged and those exposed to great heat. Boracic acid solution applied three or four times a day with a soft sponge is the treatment.

The *Lancet* gives a recipe for *Prickly Heat* which will meet the milder forms of these itching diseases.

R.—Oxide of Zinc, ... one dram,
 Oxide of Magnesia, ... three drams,
 Flowers of Sulphur, ... two ounces.

Mix.

“This is to be used morning and evening in the following way: The dry powder being on a plate, a wet sponge is then pressed down on it, and a little will adhere; this firmly rubbed on the parts affected, fresh moisture and powder being from time to time supplied, the application being continued from ten to fifteen minutes at each sitting. The parts are then washed. I have never seen the worst cases last beyond four or five days. No smarting attends the use of this remedy, and after the first application itching is practically at an end.”

The squamous or scaly eruptions receive the general medical terms *Lepra*, *Psoriasis* and *Pityriasis*.

In *Leprosy* the crusts are whitish, silvery, thin at first, but become thick. The patches may be distinct and circumscribed by a red line or may spread. Sometimes the scales are black and blue. In *Psoriasis* the patches are more level, not depressed in the centre, are irregular in shape, not round and rough, not smooth, and the skin appears chapped. With *Pityriasis* we are all familiar. In the hair, its most common location, it is called dandruff. It is not so well known that other parts of the body, those not covered with hair, may be affected. This is so common that we will consider it at length.

DANDRUFF.—*Pityriasis Capitis*.

An affection of the scalp in which fine scales are continuously formed and thrown off. There is no pain, no crusts, and only occasionally itching. No age is exempt. The head is found to be dry and hot, caused by indigestion, excesses and other diseases and conditions producing a low grade of fever, or it may be traced to mechanical causes; the use of unclean brushes, of false hair with their fungi, too much stimulation of the scalp by excessive brushing, and the use of strong alkalies and other remedies sold to prevent the complaint. No ill results follow; in fact the principal feature seems to be the annoyance caused by the continual presence of the white scales in the hair and their deposit upon the dress, coat collar and shoulders, particularly to persons making any pretensions to neatness.

TREATMENT. Borax, carbonate of potash, lead and similar drugs are *not* beneficial, nor are the many preparations of castor oil, because the former add to the dryness that is already present and the latter make the dandruff less conspicuous, only to reappear when the superabundance of oil is wanting. A better local application is

℞.—Sublimated Sulphur,		two drams,
Sulphate of Zinc,		two drams,
Rose Water,		one pint. Mix.

Shake and apply with a clean brush or sponge every two or three days.

A previous application of carbolic acid well diluted in water may be necessitated if fungi are present. False hair should be boiled in borax and water. Dyspepsia needs attention and the body should be kept cool and cleanly by daily baths.

Salt Rheum is a name much used by the people, but unfortunately is given to so many forms of skin disease that it is impossible for a physician to discriminate. The experience of others differs from our own. In our observations we have found it more commonly assigned to the scaly tetter—psoriasis. The treatment in such a case would be the same as for psoriasis; locally the antiseptic or white ointment and internally the Queen's Root compound.

Observations.—It is painful to think how many mothers absolutely refuse to cut their children's locks, or try all sorts of shifts to avoid the dread alternative, however much diseased the scalp may be, or however filthy the hair. Another prejudice, more difficult to combat than even maternal notions of the æsthetic, is the belief that there is some danger in healing a tolerably extensive skin disease, especially one affecting the scalp. There is a fear of convulsions, which has been proved groundless again and again. One great German authority in the treatment of skin diseases observed many thousands of such cases closely, and never found any connection between them and nervous disease. If it is fits you are afraid of, does it not stand to reason that the constant itching irritation of the diseased part, and the consequent sleeplessness and loss of general health, are fully as likely to lead to nervous troubles as the healing of the disease by means directed both to the constitutional state and to the affected skin?

Navus, mother's mark and *moles*, must be referred to the surgeon for treatment. Lupus or superficial cancer, is described in another part of this volume. (See Index.)

Tan or *sunburn* may be removed by spreading on a paste made of

magnesia and milk or glycerine. In a few minutes remove by washing with castile soap-suds and rinsing with water.

Freckles are deposits of pigment or coloring matter caused by heat. They are objectionable because they destroy the beauty of the face. The French women, who carry heating pans for warming the legs, have freckles upon the legs. Blisters on brunettes cause darker deposits, which are permanent. For freckles, rub frequently with lemon juice and allow to dry on. Wash with borax water. In more obstinate cases, carefully touch each spot with a camel's-hair brush moistened with a solution of chloride of lime ten grains, and water two to four drams, according to the sensitiveness of the skin.

Liver spots, liver stains, (Chloasma) have nothing to do with the liver, but are caused by uncleanliness, wearing flannels too long without change, or by contagion. It is caused by a vegetable parasite which grows under the scarf skin. The patches appear chiefly upon the chest, abdomen, upper arms and neck, are circular or run together, forming irregular shapes, and of a yellowish-brown color. Their only annoyance arises from a knowledge of their presence and their itching when heated.

TREATMENT. Change the under-clothing frequently. Dismiss the belief that there is any special virtue in flannels that are worn until they rot or almost reek with filth.

Bathe the whole body daily in strong soap-suds, using a flesh-brush. To the affected part apply a lotion of diluted sulphurous acid, carbolic acid, ammonia, or

R.—Corrosive Sublimate,	.	.	.	five grains,
Alcohol,	.	.	.	four ounces.

Mix.

Rub on with force once or twice a day. It is poisonous; *be careful.*

It may be considered out of place to introduce the subject of *lice*, but the filth and itching suggested it. Although "born and bred" among the filthy, these little animals too often emigrate to the scrupulously cleanly. There are several kinds, and each preserves its

identity. Head lice and "crabs," only inhabit parts of the surface covered with hair, while body-lice dwell in the seams of garments and travel the skin for food. The former are the pests of the school-room, the dormitory, and other places where persons are closely crowded and cleanliness is the exception. The latter infest camps, prisons, tenements, street cars, etc. For lice in the hair, soak one ounce of larkspur seed in a half pint of alcohol, for a day. Thoroughly wet the hair at bed-time every other night. Two or three applications are all that are necessary. The hair may then be cleansed with borax water. Body lice are destroyed by attention to the clothes. All the clothing should be changed daily and either boiled or baked. Two full suits alternated in this way for several days are effectual. Bathe the body daily and use the flesh-brush.

RINGWORM OF THE SCALP.—*Porriago*.

The vegetable parasitic diseases are caused by the development of a fungus, chiefly on the parts covered with hair. By a fungus is not here meant a toadstool, but a very minute organism which, owing to certain similarities in the mode of reproduction, is ranked in the vegetable kingdom with the fungus. The fungus grows round and into each hair, just as ivy does about the stem of a tree.

The commonest of these diseases is the ordinary *ringworm* of the scalp. Whenever the disease is observed, efficient measures should be taken to cure it, instead of wasting time with some of the feeble popular remedies, such as ink; thus permitting the affection to spread and become established. The hair should be cut off for half an inch around each patch of ringworm. Get a small camel's-hair brush, and a solution of the following composition: Iodine, thirty grains; colorless oil of tar, two drams. Apply the solution carefully with the brush *to the diseased part only*. Repeat the application in a week. It is a most obstinate disease, and requires the exercise of great patience. Children suffering from ringworm should not be much confined in the house.

BALDNESS.—*Alopecia.*

The cavity in which the hair grows is a depression in the skin, with a projection at the bottom, and may be compared in this respect to a bottle. The projection is the papilla of the true skin, on which the modified scarf-skin is formed, of which the hair consists. Now if this papilla be destroyed, or if such a change comes over its blood-vessels or nerves, as to make growth of hair impossible, it is clear that any attempts to restore the hair will be fruitless. You might just as well apply a salve to the gums in hope of producing a third set of teeth, as keep rubbing "hair-restorers" over the scalp where the follicles have been destroyed either by injury or by natural decay. When the hair has fallen out, leaving the surface smooth and bare, like a white kid glove, as sometimes happens, no success is likely to attend any endeavors to restore the growth. When, however white downy hairs remain, there is, as a rule, fair ground for expecting ultimate success. The principle upon which all outward applications are made is the stimulation of the surface, so as to bring a larger supply of blood to the part, and thus to cause a more rapid growth of every tissue. Thus the hair brushing which it is hoped will remove dandruff, stimulates the skin and produces a more rapid growth of dandruff. The same stimulation tends to more rapid growth of the hair. All irritating substances—mustard, hartshorn, cantharides, etc.—have the same tendency. The youth, ambitious of possessing the facial aspect of manhood, is recommended by his knowing friends to rub his cheeks and upper lip with a preparation of Spanish fly. The result which he hopes for has been known to follow, to some extent, in the other sex, the application of a mustard plaster for a sore throat. In convalescents from fevers and in anæmic individuals what is wanted is a combination of mild stimulants and astringents, and in steorrhœa, where the sebaceous glands are distended and plugged with hardened oil, alkalies and solvents. Excitement, brain-work, sedentary confinement, the use of stimulating foods and beverages, and venery, keep the head hot and destroy the hair bulbs.

When these are wasted away or cease to be productive no treatment can renew their fruitfulness. On the other hand, if by the aid of a powerful magnifying glass thin delicate hairs can be detected the chances of restoration are favorable.

ERYSIPELAS.

Erysipelas is a peculiar form of unhealthy inflammation attacking the skin and cellular tissue, deriving some of its peculiarities from the structure invaded, having a strong tendency to spread or diffuse itself with great rapidity by continuity of surface. It may extend itself over any continuous surface of the skin. The areolar tissue, the mucous and serous membranes, the lining membranes of arteries and veins, and lymphatics, are all liable to be attacked by it. It may affect any surface, either external or internal. No period of life is exempt from its attack, though children are more rarely affected than adults. The face, which is its most common location in the adult, is seldom affected in children. Some persons seem to be predisposed to the disease, the most superficial injury being followed by it. It is considered as being a zymotic disease in which there is a blood-poison. The disease is an effect of debility.

The cutaneous or simple, is the mildest form of the disease, commencing with chill and flushes of heat, followed by headache, nausea, hot skin, quick pulse and coated tongue. In from twenty-four to forty-eight hours, the rash makes its appearance, though sometimes it comes out simultaneously with the constitutional disturbance. The rash is of a uniform, vivid, rosy-red hue, sometimes becoming dusky and always disappearing on pressure, accompanied by puffy swelling, caused by serous effusion into the cellular tissue, severe burning, stinging pains and dropsical swelling. The ordinary duration of the simple form of erysipelas, is from seven to fourteen days. Some times it is followed by abscesses.

Phlegmonous erysipelas differs from the cellular by the greater intensity of the inflammation and the depth to which the tissues are involved. The pain is pungent and burning though it may soon abate.

sume a throbbing character. The swelling, at first soft, diffused and admitting of distinct pitting, soon increases and becomes tense and brawny, the skin being evidently stretched to its full extent and the limb appearing, perhaps, to be double its natural size. If the disease runs on, suppuration of the part, pain, swelling and redness diminish, giving rise to an apparent though deceptive appearance of improvement in the patient's condition. The skin becomes darkly congested, and the part, instead of being tense and brawny, has a somewhat loose, soft and boggy feel, communicating a semi-fluctuating doughy sensation to the fingers. This change is indicative of the formation of pus.

Diffuse inflammation of the cellular tissue or *cellulitis*, invariably arises from a wound, often of a very trivial character. It is especially apt to follow any inoculation of animal poison, as dissecting wounds, stings of insects, the bites of venomous reptiles. In whatever way arising, it is characterized by the rapidity and extent of the sloughing of the affected tissues, and by great depression of the powers of the constitution. A rapidly increasing swelling appears, its surface tense, shining, and usually pale, feels hard, resisting, but frequently yields a semi-elastic sensation, hence it is called boggy or quaggy. There is severe pain of a burning, throbbing, or heavy character; tensive pulse, frequently sharp and jerking, having no force or steadiness; countenance anxious and haggard, mind irritable, and, at times, delirium. The disease contracted from an injury is much more dangerous than the other forms noticed above. In any form, it is more dangerous at either extreme of life.

It is distinguished from other surface inflammations by its beginning in a small circle or ellipse about the size of a coin and spreading uniformly in all directions. DaCosta remarks that he has seen mumps mistaken for it. The presence of the contagion, or the pain in moving the jaw, or the limit to the redness of the skin, will easily differentiate it. In inflammation of the lymphatic glands there will be found a number of small and separate red streaks running in the direction of these glands.

The indications are to relieve the intestinal tract of all impurities ; to neutralize the blood-poison ; to relieve the local pain and swelling ; and to tone up the system.

TREATMENT.

The administration of a remedy that will induce a free watery movement of the bowels, is of the greatest importance in beginning treatment. We give preference to a powder composed of

R.—Podophyllin, ... two grains,
Cream of Tartar, ... two drams.

Mix thoroughly and give one-half with molasses or syrup at bedtime and the remainder after the morning lunch, and then stop.

The tincture of muriate of iron in five or ten drop doses should be given every four hours. To save any unpleasant effect upon the teeth or mouth the dose should be mixed with a third of a tumbler of water and taken into the mouth by a glass tube, the end of which lies well back upon the tongue. Two hours after each dose a two or three drop dose of veratrum should be given in a teaspoonful of water. Both these remedies neutralize the blood-poison. We have little if any faith in the common practice of circumscribing the local inflammation by painting with iodine. Repeatedly has it overstepped this barrier in a single night.

That remedy which acts directly upon the poison and which has an immediate effect upon the congested blood-vessels is veratrum. There are two methods of application. First: Having some in a saucer or preserve dish, paint the inflamed surface as frequently as every half hour with a soft camel's-hair brush. When the brush is not easily had, use in its place a bit of cotton cloth, the edge of which has been frayed to the depth of half an inch, binding it around a stick the size of a quill, fastening it ; and with this smear the surface. Or, take a piece of cotton cloth of two or three thicknesses and a little larger than the inflamed part to be covered and immerse it in the veratrum and apply. Repeat the application as often as it dries. The admixture of a little glycerine to the veratrum will prevent its drying too quickly.

As a tonic for dark-complexioned persons, the iron as above indicated may be continued through convalescence. For others the use of the golden seal syrup, or other bitters of a vegetable character, is advised. If the system has long been suffering from chronic disease, this should receive special attention. Every hygienic means should be adopted that will improve the general health.

In crsipelas arising from wounds, the local treatment is of great importance, and consists principally in the use of the antiseptics, such as carbolic acid, sulphate of zinc and the like.

BOIL.—*Furunculus*.

A wit has termed these troublesome things "comforters." An experience in this line is very likely to enhance our knowledge of Job's situation, if not elicit our sympathies. Wherever situated, the place is not one to suit our convenience. We always prefer it somewhere else and perhaps on some other person.

Beginning in a small point in the cellular tissue under the skin, it enlarges in every direction, pushing up the skin in the form of a pyramid. There is much redness, swelling, heat and pain. The skin is tense, red or purplish, hot and shining. In about a week it reaches the size of an hazel-nut or wall-nut, shows a white spot or head which opens through the skin, discharging bloody matter. When the sheath of the abscess called the *core* is expelled, the flesh soon heals. Sometimes, from blood impurities, boils follow each other in rapid succession. As painful as they are, they have a value in indicating a crisis, when under medication designed to expel these impurities.

TREATMENT.

Thorough rubbing with the hand will sometimes dispel them, or applying spirits of camphor while rubbing. Internally may be given two drop doses every three hours of tincture of arnica, or teaspoonful doses of fresh lime water in half-cups of milk three or four times daily. If the boil still shows signs of progressing, as soon as the outline is apparent an hypodermic syringe may be pushed into its cen-

tre, leaving a drop only of a mixture of equal parts of carbolic acid and glycerine. If these means are not at hand the pain may be relieved by rubbing, beginning at the outside of the inflamed circle and approaching the centre spirally. Or, if the skin is unbroken, apply on a disk of flannel or cloth, covered with oil-silk,

R.—Tincture of Arnica flowers,

Tincture of Aconite root,

Laudanum, ... in equal parts.

Mix.

Should these means fail, it will be better to poultice with hot water compresses, or with flaxseed poultice, or with bread and hot milk poultice. This favors decay and softens the skin. When the whitened *head* appears the abscess should be opened, to facilitate the discharge of the contents and hasten recovery. The ripened point should be frozen, either by the application of a piece of ice well salted and held in a napkin, or by applying a spray of ether or chloroform to the part. When the skin becomes whitened it is insensible and the lance or penknife blade should at once be introduced. No after-dressing is necessary but water or the antiseptic ointment.

ABSCESS.

In some particulars this resembles a large boil. There has been an inflammatory condition in the part affected, with heat, pain and swelling. The result of this inflammation is the discharge of degenerated matter or pus. This process is called suppuration. This pus becomes located, is encased in a false membrane and points, like a boil, in the direction of the least resistance. This process may require a week or it may take months. In low grades of fever and in the debilitated, an abscess may be accompanied with all the symptoms of grave disease. There may be feeble pulse, hot skin, coated tongue, loss of appetite, with chills, night sweats and hectic. Abscesses form in all parts of the body; in the breasts, neck, armpit and groin; in the different organs, particularly in the lungs, liver, kidneys and tonsils; about the rectum, the hip joint and spinal

column. Fluctuation can usually be felt and when the tumor closely approaches the surface can be seen. They may be opened as soon as pulsation is detected, the same as boils, or the operation may be delayed, until, by hot compresses, they point. The matter (pus) should be completely discharged by gentle pressure and the cavity freely washed out by injecting a mixture of one part of carbolic acid and twenty of warm water. This washing should be repeated daily until pus ceases to flow, when a compress wet in the solution may be applied and pressure exerted by a bandage, when healing will rapidly take place.

PSOAS OR LUMBAR ABSCESS forms near the spine and may involve the bones in the destructive inflammation. It appears in the scrofulous or may result from injury to the back. The notable feature is that the pus follows the large muscles which gives it its name, and appears for exit upon the front of the body, in the groin. Swelling from the accumulation continues at this place until vent is made. The abscess should be opened promptly, and the parts thoroughly washed with the carbolic acid solution just mentioned. A flexible catheter should be introduced and passed along the muscles and through this the wash carried to the spine. The loss of flesh and strength are great, and the suffering is sometimes distressing. The curvature of the spine is distorted when these bones are involved to any great extent. Constitutional treatment is necessary, and often the only one admissible. This consists mainly of the Compound Queen's Root syrup, and alteratives noticed in writing on scrofula and in the use of the Cod Liver oil and Hypophosphites mentioned in the treatment of consumption.

MALIGNANT BOIL.—*Anthrax, Carbunculus malignus.*

ANTHRAX is an infectious disease transmitted to man and other animals from diseased cattle. It comes from contact with the flesh or blood of the carcass, or through the agencies of flies. The following will illustrate its virulence. The skin of an ox, which died of an-

thrax, in the fall of 1852, was in the following spring soaked in a pond and then made up by a saddler into harness. The saddler had carbuncle. Of a flock of sheep that was washed in the pond four weeks later, twenty perished in a few days of anthrax and both of the horses for which the harness was made, after four day's use, showed symptoms of the disease and died in forty-eight hours. A speck like a flea bite first appears upon some uncovered part of the body. This burns and itches, soon forms a blister and bursts, disclosing a dark red base. This crusts over, but the redness and swelling continue until they cover the entire arm, half the neck, etc. The part is hard, doughy and slightly suppurative or gangrenous. High fever, delirium and collapse follow.

TREATMENT.

The bleb should be excised and part of the surrounding healthy flesh, or carbolic acid in crystals should be freely applied. Internally two drop doses of the acid in a dram of glycerine every hour and stimulants. The use of the Turkish bath is indispensable. Recovery is slow at best. In some cases one or two years are required for complete restoration and before the usual health and strength are regained.

CARBUNCLE.

This is a malignant tumor closely resembling a large boil. It is situated upon the back of the body, its favorite seat being the nape of the neck. It begins in a pustule which burrows in all directions from this point as a centre and extends until it attains a size of from three to six inches in diameter. Flat, hard, immovable, burning and painful, it reaches its full dimensions in about ten days, when small blisters appear upon different parts of its surface. This will open and discharge a thin bloody and fetid pus. Its malignancy is now apparent. The skin which was dark red or purplish now mortifies and sloughs off,

leaving a large open ulcer, extremely offensive in odor and appearance. Sometimes the skin is not much damaged but the tissue underneath has extensively mortified. Chills, fever and great prostration of strength attend carbuncle.

TREATMENT.

This must be active and every effort must be made to save tissue and limit the inflammation. At the outset glycerine and veratrum viride, equal parts, should be continually applied by compress. Veratrum in two drop doses should be administered internally every two hours. One hour after each dose the sulphite of soda in three to five grain doses should be given. This internal treatment should be kept up as long as the disease continues, lengthening the intervals between doses as the inflammation subsides. The diet should be nourishing and milk given freely. Suppuration may be hastened by applying hot packs. When the openings form in the tumor or are artificially made with the knife the topical treatment should be changed to antiseptic injections. As often as four times a day each one of these should be *thoroughly* syringed with a solution of carbolic acid one part and warm water five parts. The pain caused by the caustic soon subsides. Threads of lint soaked in the solution should be pushed with a probe into the openings and a double thickness of lint, soaked in the same, laid over the carbuncle and frequently renewed. The deep cavity left fills up slowly but the antiseptic dressings should be employed uninterruptedly until the surface heals.

RUNROUND, FELON, WHITLOW.—*Paronychia*.

A kind of boil or abscess upon the fingers, but commonly met upon the hands, arms or toes. When superficial or burrowing around the root of the nail it is called run-round. A bandage saturated with veratrum viride or a strong solution of carbolic acid, will cure this form. When located in the flesh or beneath the covering of the bone it is very painful, the surface is red and swollen, and there is a deep-seated throbbing, increased by holding the hand down. Sleep

is broken, and, in fact, often impossible, unless the hand is fastened above the head by a sling secured to the bed-post or head-board, or some such means. When the felon opens the pain ceases. Attempts should be made to thwart this tedious process. There are several plans for so doing. One is to take fresh poke root, bruise it, and heat upon the stove. When hot, envelop the finger and tie over it a piece of oil-silk. Another is to soak the finger in strong lye water, warm. Still better, soak in strong carbolic acid solution and paint over with collodion, with several coatings, allowing one to dry before making another. This contracts with even pressure. If these fail, the abscess should be opened with the blade of a penknife. This operation is painless if the finger is first rendered insensible with the spray of chloroform or ether. In fact, a freezing mixture, such as snow and salt, will cure a felon. Put the finger in the mixture and hold it there till the pain ceases. It may increase at first, but persevere. Repeat if the pain returns.

CORNS.—*Clavus*.

These are round, small, horn-like excrescences upon the body projecting above the surrounding skin. The papillæ of the skin (little points filled with nerves and blood-vessels), from some external or internal irritation, take on uncommon growth. The scarf skin also develops unduly. Corns appear upon the hands and feet, particularly the latter, and result from friction or pressure, by too loose or too tight boots or shoes. The hard corn is situated on the sole of the foot, on the joints of the toes, and chiefly on the small toe; the soft corn, differing in no particular from its neighbor, grows between the toes. The softness is due to the continual bathing in the perspiratory vapor. The roots are the vertical fibres, but their extraction does not insure against their reappearance. Corns seldom more than annoy and pain their possessor; the exception being when they inflame from uncleanness, excessive walking or dancing, or cause inflammation and decay of the bones and their periosteum. Fashion

looks with favor upon a small foot, and as the boot or shoe must be "one size smaller" than sense and comfort require, it is safe to predict that among her votaries the crop of corns will continue to be promising and the harvest abundant.

TREATMENT.

Prevention is better than cure and this can readily be attained by removing pressure, daily washing in cold water, and friction. When they become irritated and painful, relief can be secured in this way: Take a piece of leather and cut a hole sufficiently large so that when laid upon the surrounding skin the edges of the corn will not touch it. Stitch to this on the side coming next to the skin several thicknesses of cotton flannel having a hole in each centre like the one in the leather. If both surfaces come in contact with the skin, as between the toes, the flannel should be sewed to both sides. The thickness should be such that the object making the pressure is removed beyond the top or crown of the corn.

A similar plan may be followed in the treatment of bunions. If hard, they should first be softened either by the application of oil or grease, or by soaking in warm water. When softened, acetic acid, pure, just as it is obtained from any drug store, should be applied night and morning. In a short time the corn loosens and can either be removed by pulling or lifted out by the finger-nails or blade of a pen-knife. The scarf skin is to be carefully removed by a sharp knife or razor as frequently as possible, taking care not to cut too close and cause bleeding. Chiropodists insert a knife point between the corn and true skin and cut around the circumference and lift it out without pain or loss of blood. The raised edge protects the sensitive pit, and a soothing ointment assists in affording comfort, and effecting a cure.

Soft Corns may be relieved by covering with ointment and inserting a pledget of cotton wool between the toes. This should be frequently washed and pared. The compound tincture of iodine makes a good application. Another plan is to apply some vesicating plaster well charged with cantharides and allow to blister, at the

same time protecting the opposite surface. In twenty-four hours cut away the raised cuticle and apply tannin, or an ointment of tannin and lard. This *tans* the corn.

When the pressure is received over an extensive surface a callous condition, *callosity*, follows. The physiological condition is analogous to the production of corns. Instances are the palms of the hands in laborers, the knees of housemaids, the shoulders of carriers, and the soles of the feet in children who go bare-footed. Callous places are painful when they become hard, thick and dry. Prolonged bathing in hot water, and scraping with a dull knife or filing constitute the usual methods of relief.

WARTS.

These growths, which also arise from the excessive development of the papillæ of the true skin, need not be described. They cause annoyance to the adolescent mind—not from any sensation they produce, but because of their unpleasant appearance. Various remedies are suggested. It used to be supposed that the application of a piece of stolen beef to the growths would dissipate them. There are evident objections to this treatment. A better plan is to apply a little nitric acid—aqua fortis. This must be done very carefully. Not more than one dram (teaspoonful) should be kept in the house. Take a small sharpened stick—a lucifer match—dip it in the acid, and so apply a tiny drop to the top of the wart. It soon becomes yellow, and in a few days the top can be picked off. Repeated applications in the same way are necessary. Strong acetic acid may be used in the same way, first having pared the wart. It is slower in its action, but is less liable to burn the flesh, or make it sore. If it bites too sharply immerse the part in water, to dilute the acid. Chloride of zinc lint is an efficient remedy.

BUNIONS.

This is a painful swelling of the second joint of the great toe, and is produced by pressure by a tight fitting boot or shoe. The bursa is

a small sack, which contains oil for lubricating the joint and tendons, and from the unnatural position of the toe takes on inflammation. Bunions are sometimes seen upon the small toe or on the instep. Pressure may be removed by the use of the cushion described in the treatment of corns. When inflamed a foot-bath in hot water and rest are necessary. The covering should be light and pliable. The bunion should be painted daily with the compound tincture of iodine, and this treatment persevered in, for the cure is tedious and difficult under the most favorable circumstances.

FETID FEET, STINKING FEET.

Persons much dislike to associate with the victims of this annoyance, and to those of keen scent their society is unbearable. It is likely a disease, and not due to habits of uncleanness, as is often hinted and sometimes, perhaps, stated in not the most pleasant tone or language. Frequent washing does no good, and if the unfortunate is at all sensitive, he or she is doomed to much unnecessary discomfort. Odorous perspiration of the feet may be a disease of the skin, of its glands or dependent upon some disease of the system which must first be removed before its cure is possible.

TREATMENT.

Woolen stockings only should be worn, and must be changed once or twice a day, those taken off to be dried by the fire. The daily change of boots or shoes is also advantageous. If this is not practicable, felt insoles should be worn which can be changed with the stockings. Upon removal, they should be wetted in chlorinated soda and dried for further use. Daily (and twice a day is better) the feet should be soaked for some time in tannin and warm water or pinus canadensis and warm water. For those living in the country near a tannery a half pailful of tan liquor will answer the purpose if always heated before use. The antiseptic ointment mixed with carbolic acid makes a good dressing.

INCURVED OR INGROWING TOE-NAIL.

This troublesome and painful affection is caused by pressure by the boot or shoe, by which the nail becomes thickened, rolled in a horn-shape, and enters the flesh. The inflammation extends under the nail and suppuration may follow.

A notch, like the letter V, should be cut in the center of the end of the toe-nail. The nail should be scraped with the pen-knife down its centre until it is very thin, leaving either side its customary thickness. The notching and scraping must be repeated every few days. If possible, the inserted portion cutting the flesh should be raised and a little piece of raw cotton inserted under it to prevent it from returning. Previous to insertion this may be wet in a solution of the persulphate of iron. Thus raising the edges the nail is flattened and the iron heals any ulceration that may be present. Some prefer the insertion of rubber sheeting, very thin, and in very small pieces, which protects the flesh from the cutting edge better than the cotton lint. These instructions, faithfully followed, will relieve most cases. Sometimes, however, it is necessary to administer chloroform and remove the whole nail by slipping under it the sharp thin blade of a penknife or a surgeon's scalpel.

GALL, CHAFE AND CHAP.

These conditions arise from moisture, and the latter from moisture and cold. Parts wetted with perspiration or water, rubbing together, or friction by the clothing, produces chafe. Tender and delicate skin, particularly in children, and that between rolls of fat, are most affected. Smearing with the antiseptic ointment, and protection from the irritating garment, is all that is required for its removal.

Chapped hands, lips or nipples, is an annoyance experienced by those in whom the parts are subjected to moisture and exposed to cold wind, or weather, or to friction. Glycerine should be thoroughly applied and well rubbed in. The hands should be warmly covered with wool gloves. Cold cream may be used upon the lips. Tannin

may be added to the glycerine in coating the nipple. The antiseptic ointment will answer for all.

FROST-BITE.

From exposure either of long or short duration, according to the intensity of the cold, different parts of the body, particularly the nose, ears, fingers and toes, are liable to become frozen. In one of the Arctic exploring expeditions, a man removing his glove to chop wood, had four fingers frozen in two minutes. The operation in this climate is more tardy and affects out-door laborers or drivers, and insufficiently protected children. The first sensation is that of cold and pain with bluish color of the skin and is soon followed by white or bloodless cast, and insensibility. The part should, as soon as discovered, be rubbed with snow or ice-water, the friction being followed up until there are positive signs of an active circulation, warmth, redness and pliability. Warm rooms and the fire are to be shunned, for a too sudden change of temperature may result in death of the affected member.

FREEZING TO DEATH is analogous and attended with the same symptoms, increased in proportion to the extent involved. Here, however, there is difficulty of breathing, and an almost uncontrollable desire to sleep. If this is gratified, death is the inevitable result. Every effort should be made by the party affected and by his attendants to re-establish the circulation of blood. If riding in a "biting air," upon the first approach of numbness run by the side of the sleigh, or, allowing the horse to go free, hold on behind and run for a mile or two—country miles at that. Upon finding a person sleeping and freezing, remove the body to a cool room, divest him of clothing and rub with snow or cold water, flex the limbs, institute artificial respiration the same as in death from drowning, and when consciousness returns walk the person, continually slapping the body with the palm of the hand. When partly revived, stimulants may be administered and the person clothed warmly. Keep away from

heated rooms and fires. Persons partly or wholly intoxicated are more liable to "freeze to death" than others; besides, they have less force of will to overcome the tendency to sleep.

CHILBLAINS differ but little if any from frost-bites. Both are caused by exposure to cold. Chilblains are more likely to be chronic, and affect more particularly scrofulous constitutions. The heels, the fingers and toes, are the parts most predisposed. The pain is not constant, but rather pungent and shooting at particular times and an insupportable itching attends. If the exposure has been long continued, the inflammation may be severe, and the surface mortify, leaving an ulcer. Frozen parts sometimes remain for years sensitive to cold and wet weather, and from their diminished vitality, the complaint recurs with greater facility.

TREATMENT.—Prevention consists of the use of warm clothing and exercising care when exposed to inclement weather. When the surface is unbroken apply the liniment

℞.—Tr. Aconite root,
Tr. Arnica flowers,
Laudanum, ... in equal parts.
Mix.

Or

℞.—Sulphurous acid, . . . one ounce,
Glycerine, ... one-half ounce,
Water, ... one ounce.
Mix.

Apply night and morning. A strong tincture of capsicum, freely applied once or twice a day, is good treatment.

This kind of treatment is only proper in case the chilblain is unbroken and is intended to increase circulation and nutrition. If it blisters, discharges or ulcerates, it should be treated as an ulcer. Obstinate cases are occasionally met with which no local application will remedy until some disordered state of the system is removed or the general condition of the patient's health improved.

BURNS AND SCALDS.

A slight superficial burn is best treated by covering the part with any thickish fluid or gum that will exclude the air; for instance, molasses, glycerine, warm glue, linseed, olive or castor-oil and varnish. Blisters should be pricked, and the scarf skin gently smoothed down and some simple ointment or oil smeared over it so that the dressing will not stick to it when removed. The burn may now be covered with cotton-wadding and a bandage used to keep it in place. A healing application is made of olive or linseed oil, three or four ounces, and carbolic acid, ten to thirty drops. This is poured upon the skin above the wound and permitted to run down between the cotton and the skin, thereby moistening both, bathing the injured surface, removing foul odors, lessening the discharge and promoting healing. Common whiting, mixed with water to the consistence of thick cream, and smoothly spread upon linen to the thickness of one-eighth of an inch, makes a good and soothing application. It must be kept moist by occasional sprinkling with warm water.

A piece of charcoal, laid on a small burn, at once extracts the pain, and if kept applied for a half hour, cures completely. Bicarbonate of soda, common cooking soda well powdered, may be sprinkled on a scald or burn, and over this a wet compress placed. The compress must be kept moist with water or a solution of the soda in water. It relieves pain promptly and permanently.

The white of an egg is good, in fact, almost anything that will exclude air. We think some one of the many articles mentioned will be found in every household. We prefer the oil and carbolic acid, or glycerine and carbolic acid, followed in case of suppuration or deep sores, by the use of an antiseptic ointment. All liquids should be applied with a soft brush, and usually the sooner the application is made the less liability to blister. Cotton wadding makes an excellent dressing; is soft and excludes air. A burn is more serious than a scald and it is more likely to prove serious on the chest and body than on the limbs. The danger to life lies not so much in its severity

as in its extent, and the amount of shock produced upon the nervous system. If the application does not remove the pain give opium or even chloroform. It is worse than useless to administer alcoholic beverages; they only do harm.

When the burns are serious, as in cases where the clothes take fire, great care must be taken not to remove the skin, which has but little hold upon the flesh, and is quite likely to be somewhat firmly attached to the clothing. If it sticks never so little, leave the sticking piece in its place and cut away the remainder. It is a good plan in every instance of extensive burn or scald, not to attempt to remove the clothes, but carefully cut them up, particularly those garments next the flesh. Thoroughly sponge the piece with the saturated solution of baking soda, until it easily lets go. Oil may be used for the same purpose. After the ointment and cotton are applied the patient may be wrapped in sheets and blankets.

The clothes catching fire, whether by accident or by carelessness, is a sad and deplorable disaster. The natural and ungovernable impulse seems to be to run for help instead of to help one's self. The individual should immediately lie down upon the floor and roll toward water, or, what is far better, *woolens*, either clothing, matting, or bed-covers. Wrapping in these completely excludes the air and the fire is extinguished. Call for assistance if you will, but do not run for it. Many lives might be saved by this means, and it requires but a moment's thought. The friends or neighbors have usually to do the thinking, however. They should throw down the sufferer, and cover with whatever woolen is most handy; the head and shoulders first. Envelop the body completely for one or two minutes and then apply the remedies.

By ballet-dancers, and others exposed to fire, precautionary measures must be adopted. The clothing is rendered incombustible by wetting in one part of the neutral solution of tungstate of soda and five parts of soft water. This destroys neither the texture or color, and positively renders the fabric incombustible.

Kerosene Lamp Explosions.

Some persons seem to think that the explosion of a kerosene lamp is caused in the same way as a boiler explosion, viz.: by the pressure of the vapor of the oil inside the lamp. In rare instances explosions may be caused in this way: for example, where the ignited oil overflows the lamp and the lamp is enveloped in flame. But explosions usually occur in another way, viz.: where the vapor of kerosene is mixed in proper proportions with air, and thus a true explosive mixture is formed, which will explode with the force of a gunshot when fired by a flame. This explains why a lamp is in more danger of exploding when only partially filled with kerosene, because a larger amount of space is filled with the explosive mixture; it is the same as a large load of powder in a gun.

Many persons suppose that there can be no danger of a lamp explosion unless the whole body of the oil in the lamp is heated to the flashing point; that because the temperature of our rooms never rises to 120°, there can be no danger in using oil whose flashing point is 120°. But Dr. Baker, of the Michigan Board of Health, has proved by experiments with lamps, that an explosive mixture may form, and the lamp may explode, while the body of oil in the lamp is not above 85° F. The temperature of the body of oil in the lamp is not the only factor to be considered, because different parts of the lamp may become very unequally heated. If you touch the brass collar of a lamp which has been burning for some time, you will find it quite hot, and the tube supporting the wick is still more strongly heated. The formation of vapor will be determined by the hottest part of the lamp which comes in contact with the oil. When the combustion is imperfect, from any cause, the brass fittings of the lamp become excessively heated. Dr. Baker found in his experiments, that when the chimney was removed and the lamp continued to burn, the temperature of the brass collar rose very rapidly in every instance; in one case, in fourteen minutes, it rose to 161° F. In this last instance very rapid explosions occurred by the side of the wick,

and to prevent the whole lamp from exploding the light was extinguished. In none of these experiments did the temperature of the body of the oil rise above 85° F. Many persons on leaving a room will "turn down the lamp" to save oil, but such economy is very liable to cause a lamp explosion, which is anything but economical. If a light is not needed in a room, either extinguish the lamp or leave it burning with the usual blaze.

BRUISES.

To bruises and other injuries by which the blood accumulates under the skin, apply plenty of hot water and pressure until all discoloration has departed. Those parts of the surface which are very spongy are more easily infiltrated and are with greater difficulty restored to the natural color. The flesh immediately surrounding the eye is of this character. Notwithstanding the disadvantage in position, the hot water treatment should be continued for some time. When completely discolored, cold water, snow or ice may be used. This will prevent the further flow of blood into the tissues, subdue inflammation, and quickly heal.

CLASS VI. DEVELOPMENTAL DISEASES.

DISEASES OF NUTRITION.

CORPULENCY, OBESITY.

The accumulation of fat in superfluity is a disease. It attends indolence, and excessive eating and drinking, though not always. Some seem predisposed to rotundity; may be lean until puberty or maternity, then develop rapidly. On the other hand plump babies may, in later life possess, Cassius-like, "the lean and hungry look." The boy or girl of fifteen years who plays violently, rests little, sleeps little, is likely to be scant of flesh, while the one who is less active in pastimes, naps when all is quiet, likes the bed, eats and digests well, may become corpulent. By the close observation of adults we have come to the conclusion that obesity is greatly influenced by the amount of fluids taken and by the state of the mind. The phlegmatic Germans are great bier drinkers and are obese. In very many cases we have found that the rapidly growing drink much water. We are not so sure about less drinking obtaining with less flesh, or that free imbibition will generate fat. A friend active, irritable and passionate, was attacked with a heart difficulty. Strict rest and quiet was enjoined for some six months. During this period the habits and condition of mind were remoulded. He became quiet, was hard to annoy, and, as a consequence, gained weight rapidly. Persons of settled income, the recipients of generous annuities and the wealthy, usually are, or grow to be fleshy.

TREATMENT.

Dio Lewis, in his excellent work on Digestion, addressing a patient, advises reduction in the quantity of food brought about gradually,

almost total abstinence of drink and exercise to profuse perspiration two or three times a day. He adds, "you must not sleep too much. Long sleep fattens. Don't go to bed very early, but get up very early in the morning. Seven hours in the twenty-four, or say *six* hours for awhile, will do. In other words, my prescription is, *keep your eyes open and your mouth shut.*" He believes the Banting system, which we will shortly present, generates disease. To talk to a fat woman about a brisk walk of a mile daily, is to waste breath. Athletes to reduce fat and cultivate muscle labor assiduously. They dress in heavy woolens and with frequent mile-runs effect their purpose. Copious perspiration will not do all, diet must be regarded. We were accustomed to see a German, with commendable zeal and perseverance, do a "two mile spurt" alternate evenings, varying the amusement (?) with a row of five or ten miles on the river. But he must have his lager bier and a jug of the cool liquid was always in the bottom of the boat. After six month's labor the decrease in weight was hardly perceptible. A marine plant (*Fucus Vesiculosus*) has been much used of late as an anti-fat remedy. It is not new and was recommended by M. Duparc. The effect is due to the iodide of potash it contains. This potash salt has been used for the same purpose and is more pleasant. We were told of a gentleman who took the plant for a month, paying no attention to diet, without benefit; the month following he dispensed with the drug and conformed carefully to the directions for diet, with favorable results. We know of no royal road to lightness and comfort.

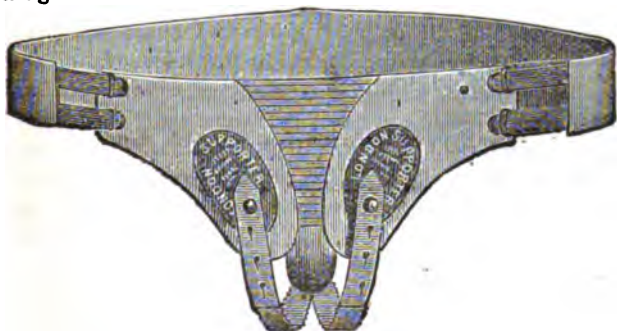
Mr. Banting, an Englishman of great weight, after trying other methods, settled upon a plan of his own by which he lost forty-six pounds a year. It consisted principally in avoiding bread, butter, milk, sugar, beer and potatoes. It is now termed in literature Banting's system or Bantingism. We present it as a curiosity, believing there are other and better ways.

Breakfast. Four or five ounces of beef, mutton, kidneys, broiled fish or cold meat of any kind except pork, one ounce of toast, a little biscuit, and a large cup of tea (without sugar or milk.)

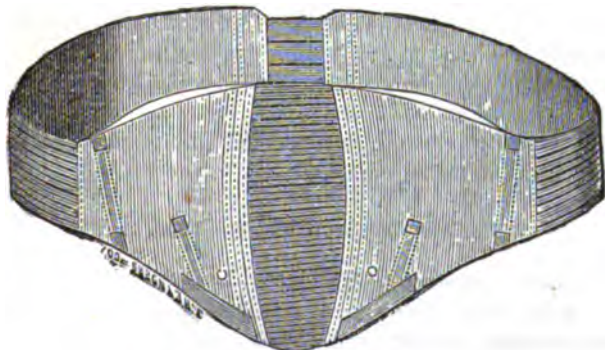
Dinner. Five or six ounces of any fish except salmon, any meat except pork, any vegetable except potato, one ounce of dry toast, fruit out of a pudding, any kind of poultry or game, and two or three glasses of claret, sherry or Madeira. Champagne, port and beer, forbidden.

Tea. Two or three ounces of fruit, a rusk or two, and a cup of tea (without milk or sugar.)

Supper. Three or four ounces of meat or fish similar to dinner, and a glass or two of claret.



LONDON SUPPORTER.



FEMALE ABDOMINAL SUPPORTER.

DEBILITY, GENERAL DEBILITY, WEAKNESS.

A man in his full strength may, by excessive or long-continued exertion, become debilitated, but this is temporary only and not that condition referred to by physicians. In this latter there is loss of tone of the nervous or muscular systems, and eventually, of both. Beginning from many causes some symptoms are in common; languor, indisposition to muscular effort, and, at a later stage, inability. The flesh becomes weak and flabby, the skin pale and most of the functions of the body impaired. General debility is attendant upon constitutional or local diseases and is always an index of some marked change in, or profound impression upon, the vitality. Sometimes typhoid fever will be so slight and so concealed that debility is about the only symptom. The more active the debility and the longer continued, the greater the difficulty in restoring the system to its proper standard; in fact, there is a point beyond which it is impossible to rally. It is not so easy to mark the limit in any given case, not but that we can gauge the amount of vitality, but there is another factor of which we know less, the stock of vital tenacity. The disappearance of the robust from our daily walks and observations and the living on and on of the invalid "at the point of death" far beyond all expectations, has come with wonderful force to every one's experience. Vital tenacity comes from several sources, from parentage that is long-lived, from health and the absence of excitement, worry and physical overstrain during early life. We believe it can be cultivated, but not to any great extent. General debility, while it saps our strength and vitality, may not draw heavily upon our hold upon life.

BOW-LEGS AND KNOCK-KNEES.

An eminent physician of Manchester, England, who has made a study of the care of infants, gives some information of great importance to mothers, in regard to the cause of the common deformities known as bow-legs and knock-knees. He attributes the first men-

tioned distortion to a habit some youngsters delight in, of rubbing the sole of one foot against that of the other—some, as is well known, will go to sleep with the soles pressed together. They appear to enjoy the contact only when the feet are naked, not attempting to make it when they are socked or slippared.

The remedy, therefore, is simply to keep the child's soles covered. Knock-knees the doctor ascribes to a different childish habit, namely, that of sleeping on the side, with one knee tucked into the hollow behind the other—a custom familiar to the observation of most parents. Here the preventive prescribed is to pad the inside of the knees, so as to keep them apart. and let the limbs grow freely the normal way.



Fig. 1.

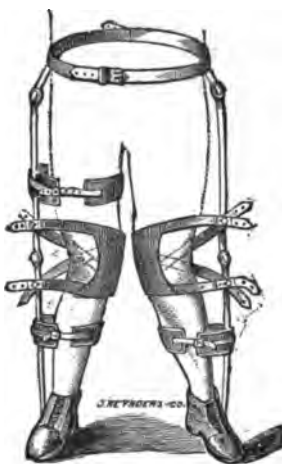


Fig. 2.



Fig. 3.

Fig. 1. Apparatus for bow-legs, making pressure upon the curve; single barred.

Fig. 2. Apparatus for knock-knee.

Fig. 3. Apparatus for bow-legs, giving support to the body and making pressure upon the curve; double barred.

CLASS VII. SURGICAL DISEASES.

WOUNDS.

The simplest form of a wound is a *cut* made with a sharp instrument. The parts can be replaced and will fit each other exactly. But when the object or instrument doing injury is blunt or rough-edged, the skin is torn or lacerated and the continuity of surface can only be approximated; cannot be exactly adapted. This does not bleed as freely as a cut but has its greater danger in the occurrence of hemorrhage at a later period, and when unexpected.

TREATMENT.—Much depends upon the character and amount of hemorrhage, the part involved and the location. If the blood *spurts* from a wound an artery has been severed. This must be tied or if the cut is not too extensive it may be closed and pressure used to stop the bleeding. If some time is to elapse before an attempt is made to apply treatment, as for instance, in waiting for a surgeon, better bind the limb on the side of the cut next the heart, increasing the pressure of the ligature until the spurting is perceptibly lessened. Another method is by flexing the limbs. If the foot is injured, a handkerchief or other cloth made into a pad can be placed under the knee, the calf brought to the thigh, and the thigh to the body. This cuts off the circulation to the foot to a great extent. In the case of the hand or forearm, the forearm should be bent upon the upper arm, the roll inserted into the arm-pit and the upper arm held closely to the side of the body. The local treatment is by astringents, such as powdered alum, burnt cork, tannin, or persulphate of iron.

either in solution or in powder. If the artery is large it must be tied. Find it in the wound, grasp with a forceps, and while some



FORCEPS.

one holds the instrument tie with silk or thread, or if possible with carbolized cat-gut. The latter may be clipped short to the knot and left in the wound; the others cause suppuration and must come out before the opening will completely heal. Do not include the nerve which accompanies the artery or you will have trouble, and lockjaw perhaps. In a cut in which no arteries are severed or only small ones, bring the edges together, and secure with adhesive strips. The adaptation is simplified if the strip is first well secured on one side: the edges are then pushed together and when in place let the strip catch and hold the other side. If the skin is badly torn or partly lost or destroyed, the edges, after removing all foreign substances like dirt, sand, hair, clots, etc., should be drawn together by stitches. Silver wire makes the best, but silk may be used. Remember that the closer the edges approach, or if they are trimmed with scissors, to prevent irregularities, the less prominent the scar. Antiseptic dressings as below described for ulcers complete the treatment.

If there are no antiseptic dressings, use strips of dry cloth, fitting snugly and make the blood itself exclude the air. If the parts are carefully brought together and well secured this is all sufficient. Do not disturb for a week, then remove after soaking in warm water until the strips unwind without using force. This treatment is especially adapted to *mashed or crushed fingers or toes*.

Stabs, punctures and penetrating wounds are injuries with doubtful and uncertain terminations. A bayonet has passed through the chest and the wound healed; a tack pricking the finger has caused lockjaw. In this and in fact in all injuries, pain does not help us forecast the result. The wound may be slight and the pain severe or

it may be insignificant and the injury fatal. Remove foreign substances and clean the wound. Insert in the opening a tuft of horse-hair or oakum for draining and to prevent the skin from healing before the internal parts. Cover with a cloth wet in carbolic acid and water or cold water or with cotton batting or boracic lint. Each excludes the air; the first and last are antiseptic. The body should be occasionally placed in a position to favor the discharge of matter and the dressings be frequently renewed. *Gunshot* wounds may be treated in the same manner. In searching for a bullet care must be taken not to injure surrounding parts. Very many carry shot in their flesh without much inconvenience. The excessive dosing with opium and morphine on such occasions is reprehensible.

The blow of a hammer upon the finger forms what is called a *contused* wound. The skin appears uninjured but the parts beneath suffer and are sometimes reduced to a "jelly." Pain attends but is less severe as the contusion is more extensive. Plunge the part in hot water or apply a hot compress. Continue the heat for a long time. If matter accumulates treat as an abscess. Blood-blisters and water-blisters may be opened by a needle introduced into the neighboring skin and carried along under the scarf-skin to the fluid. This takes off pressure and relieves pain.

BED-SORES, OLD-SORES, ULCERS, FESTERS.

These occur chiefly in the debilitated, intemperate and scrofulous. The surface may be destroyed to an unlimited extent and not unfrequently the deeper tissues decay. Beginning in a small sore, the tendency is to enlarge; unlike a wound which inclines to heal.

TREATMENT consists chiefly in the use of antiseptics and the exclusion of air with its poisonous vegetable and parasitical germs. Ulcers which under the best care formerly consumed a twelve-month are now cured in a single month or less time. The good results following the use of dry earth pointed to the present methods. After the earth came the earth and an antiseptic ointment. The use of earth was then discarded and antiseptics exclusively employed. We

have had flattering effects from a course of treatment in this manner: Make an application by a brush or by a pad of a strong solution of carbolic acid and water. It will not do to use any but the softest lint or old linen. We consider a sponge harsh, always using a long hair soft brush. The brush we cleanse thoroughly in hot water, adding a few drops of carbolic acid after each use. In twenty-four hours wash with the brush or by pouring a gentle stream from a height of a weak solution of the same. Now apply a compress saturated with

R.—Carbolic acid,		one dram and a half,
Glycerine,		one ounce,
Water,		seven ounces.

Mix.

Support must be given to the edges so as to avoid a tendency to pull apart with every motion of the body. Take strips of adhesive plaster four inches longer than the diameter of the sore. After shaving off all hair likely to be touched, apply two and one-half inches on one side, taking a direction toward the centre of the sore, and hold until fastened. Now bring the opposite edges that come under the strip a considerable distance toward each other, carry over the compress and fasten the free end. Apply a second strip in the same way across the centre of the first. Over these tie a covering of cotton batting to exclude the air. Keep the compress wet by pouring the lotion upon it. The batting may be frequently removed for this purpose but do not disturb the compress oftener than twice daily. Rest is also necessary.

The latest and quickest cure is by boracic lint. To this we referred in speaking of lacerated wounds. Surgeons lint or cotton wadding is prepared by soaking in a saturated solution of boracic acid while boiling. This is hung up to dry without pressure. As it cools the acid appears in the form of crystals. (Boracic cotton is now an article of trade and is inexpensive). The sore and the skin around is washed with a solution of carbolic acid or boracic acid and covered with a piece of oil-silk the size of the sore and wet in the same.

Three thicknesses of the lint, or one of the wadding, are also wet and applied over it. A snug fitting bandage completes the dressing. The rapidity with which large surfaces heal under this dressing is almost incredible.

Varicose Ulcer.—The veins of the leg have considerable weight to bear, equal in fact to a column of water the size of a blood vessel, and in length to the distance between the feet and the heart. Circulation in the veins is always tardy in this locality, and any obstruction causes swelling or *varicose veins* and other difficulties, and results in ulceration. It is apparent that bands and garters seriously complicate matters. This may be obviated by fastening the top of the stocking to an elastic which is secured to the corset or waist-band of the pants, both of which should be in turn supported by the shoulders. When a garter must be worn it should bind above the knee so as to get the benefit of the hamstring tendons which will in a measure keep the pressure from the veins. Such ulcers are common and should be treated by removing pressure, by resting the limb upon a chair while sitting, and upon a pillow while in bed, and by the boracic lint as just described.

FRACTURE

Or a break in a bone may be simple, in which case it is divided, or it may be divided and one or both ends project through the surface, or it may be broken into several pieces, and the flesh, nerves, and blood-vessels implicated. Hence the treatment varies, but the fundamental principles are the same. Bones unite differently from flesh and it may be well to contrast them. When the flesh is severed by accident or otherwise, the chief aim of the surgeon is to form immediate union or as it is technically called union by "first intention." This is more easily accomplished during the first twelve hours than at any later period; not that complete union will actually occur but that it will to a considerable extent and even this advantage is only possible within the time specified. The healing cement which nature provides is supplied promptly; after a while the action of the atmos-

phere and its poisonous contents not only cause the discharge of poisonous and irritating matter (pus) but tend to chemical change, to putrefaction. To obtain the desired result, cleanliness is indispensable. No wound or flap should be closed until all particles of bone, sand, dust, hair, threads, lint and even clots of blood are removed. It is sometimes tedious to remove all the sand, but this must be carefully and thoroughly done. The wound is dried and the edges brought into exact contact, secured by adhesive strips, and covered by cotton batting which is glazed on one side and soft and fleecy on the other, to exclude the air. The plastic material that is to unite the ends of bones appears much more tardily, but has its limiting time of supply. This will vary according to the part injured, and the constitution of the patient, but may be fixed at forty-eight hours. Within this period the fragments if displaced should be restored to their proper places and there maintained by splints. Complete rest is necessary for from ten to fifteen days, when slight motion is permissible. Not only are the pieces glued together, but an excess of bony material has been thrown out about the fracture, forming a solid and supporting ring which remains for a year. If the bones have been improperly set the deformity remains for life. Splints may be made of wood but we prefer those made of wet pasteboard, or of cloth wet in starch paste or thin glue, or plaster of paris. The part is covered with cotton-batting and one of these applied and allowed to dry; a second or third may be overlayed until the support is sufficient.

A bone may become *dislocated* by external injury. It is not broken but put out of joint with its fellow. Occasionally we have cases in which this occurs from disease of the joint. The bone must be replaced and held there by bandages and the inflammation and other complications that may arise be properly met.

Scars follow most wounds, their "ugliness" depending upon the extent of skin lost, or the carelessness in adapting the edges. Unless painful or crippling they amount to nothing except upon the hands, neck and face where they are easily seen and repel one by

their hideousness and unsightliness. The everted eyelid, depression upon the cheek, lost tip or wing of the nose, wryneck and webbed fingers from burns, and in fact most all such disfigurements can be removed by the surgeon. Autoplastic surgery, with its skin-grafting and transplanting is one of the wonders and successes of this century.

Stitches are rheumatic pains in the side, closely resembling pleurisy. They are sharp and sudden and may be increased by pressure, breathing and motion. Doctors call it *pleurodynia*. It is not always in the chest walls, but may be caused by wind in the intestines, and is located in this viscus under the short ribs. In this case aromatics are indicated; in the other, rest and hot packs, or the hot water bag.

Strains can hardly be called injurious, for we strain upon making any extra muscular effort. It becomes painful and dangerous when we *overstrain*. This is the popular meaning of the word strain. The muscular fibres are stretched beyond their power to return. Rest is required until nature repairs the injury.

Sprains. A sprain is a violent wrenching or twisting of the fibrous parts of a joint. The wrist, knee and ankle are most often sprained. This is followed by inflammation, slight or extensive, according to the amount of injury. Their history presents some strange incidents. A lady, after a month's care of a sprained ankle, was walking with difficulty and care, when slipping, her whole weight came upon the injured foot. The partial displacement was remedied and all pain departed. A lady skating sprained both ankle and knee and was unable to walk. Cold compresses were used and in twenty-four hours she could walk. A gymnast sprained his wrist in "tumbling;" the pain was slight, but a low grade of inflammation continued for a long time, and it is doubtful if the wrist ever recovers its former strength. A lady accidentally stepped upon a thin sheet of ice, not a foot square, frozen to the sidewalk. Her ankle turned, but she was able to walk to her home close by. It was four months before she left her bed, and nearly a year before she walked without limping. It is evident that no accurate prognosis can be given in case of

sprain. It is a great misfortune at any time. The treatment consists of absolute rest, and the application of a lotion consisting of

R.—Tincture of Aconite root,
Tincture of Arnica flowers,
Laudanum, ... in equal parts.

Mix.

This may be applied by a compress wrapped around the joint.

LIGHTNING STROKE is usually fatal. When there are evidences of life, however feeble, use friction, dashes of cold water and artificial respiration, as advised under suspended animation. In a thunder-storm better keep away from lofty trees, metal structures, and other good conductors of electricity. Lightning rods are a protection if properly constructed, but the majority throughout the country are worthless, if not dangerous.

DISEASED CONDITIONS FOLLOWING WOUNDS.

Upon the surface of wounds, whether surgical or accidental, false growths sometimes appear. In familiar language it is known as *Proud Flesh*, by surgeons as *Fungosity*. The treatment is by caustics; it is easily destroyed by blue vitriol, although some cases require sulphate of zinc or carbolic acid, and, in obstinate cases, chloride of zinc.

GANGRENE is the partial death of a part or organ. It is the dread of the hospital, civil or military. It sometimes acts as a contagion, attacking all open wounds; or it may be caused in an individual case by violent inflammation, by frost or burning, or by any means that cuts off the circulation of blood to the part. There is loss of sensation in the part affected, the surface is mottled black, blue and purplish, and covered with water blisters. Every effort must be made to reduce the inflammation and internal means be employed to neutralize and expel the blood poisoning. If the part turns black, *mortification* has set in and the treatment should then be directed toward preventing its spread. This is done by the application of the sulphate of zinc, which sloughs off the decayed mass.

CARIES and NECROSIS. The bones are subject to the same devitalizing processes as the flesh. Caries of the bone is analogous to gangrene of the flesh, and necrosis to mortification; the former is decay, the latter death. Caries occurs from injuries, poisons and the progress of certain constitutional diseases, specific and scrofulous. There is a hard and extensive swelling of the bone and soft parts, abscesses form and the matter burrows through the flesh, forming canals which eventually "point" upon the surface. Through these is discharged dark-colored, fetid and bloody matter, copious in quantity and having a peculiar odor. Hectic fever is common. A probe passed into one of these openings will detect the *rough* surface of the bone. This is characteristic, for bone covered with its proper membrane is always *smooth*. *Hip disease* is a scrofulous caries of the hip joint, resulting in a shortened leg if not in more serious consequences. Caries may be stopped by reducing inflammation and if there is an opening, by injecting sulphate of zinc, chlorate of potash and the like. If the bone is dead, it will be impossible to heal the openings and the necrosed bone must be removed by the surgeon.

PYÆMIA. We will close this subject by a few remarks upon pyæmia. Here the veins inflame and either form pus and throw it into the circulation or they absorb the decaying matter and thus effect poisoning of the blood. There is a severe chill, followed by profuse sweating, nausea and vomiting, tongue badly coated, offensive breath and dejections, dark colored and fetid urine and tenderness of the whole body. Then follows painful abscesses and delirium; and coma precedes a fatal termination. The treatment consists in freely opening all the abscesses and injecting them with carbolic acid or sulphate of zinc solutions, and in using internally the tincture of iron and quinia or other antiseptics and tonics.

CONCLUDING CHAPTER.

"The more slowly man grows," says Professor Hufeland, "the later he attains to maturity and the longer his powers are in expanding, so much longer will be the duration of his life ; as the existence of a creature is lengthened in proportion to the time required for expansion. Everything, therefore, that hastens vital consumption, shortens life ; and, consequently, the more intense the vital action, the shorter the life. If you would live long, live moderately, and avoid a stimulating, heating diet, such as a great deal of fish, flesh, eggs, chocolate, wine and spices." Animal food, and all other stimulating diet, particularly in youth, do incalculable mischief, though by such slow degrees, that in general the evil is neither perceived nor suspected. The stream of life is hurried on precipitately, the passions are prematurely developed, and, like a plant that has been forced too rapidly by artificial heat and stimulating composts, the organism is exhausted, and it becomes diseased and old when it would, under a more appropriate diet, have been in its perfection.

"It has been established on the best grounds, that our nourishment should be used in form rather coarse, securing full mastication and insalivation, and a longer retention in the stomach. Plain, simple food only, promotes moderation and longevity, while compounded and luxurious food shortens life. The most extraordinary instances of longevity are to be found among those classes of mankind who, amidst bodily labor and the open air, lead a simple life, agreeable to nature, such as farmers, gardeners, hunters, etc. The more man follows nature, and is obedient to her laws, the longer will he live ; the further he deviates from these the shorter will be his existence. Rich and nourishing food and an immoderate use of flesh, do not prolong life. Instances of the greatest longevity are to be found among men who, from their youth, lived principally on vegetables, and who, perhaps, never tasted flesh." "It seems," says Lord Bacon in his Treatise on Life and Death, "to be approved by experience that a spare and almost Pythagorean diet, such as is prescribe"

by the strictest monastic life, or practised by hermits, is most favorable to long life."

The Pythagoreans, who lived on a simple vegetable diet, afforded the most numerous instances of old age. "The Essenes, as we call a sect of ours," says the Jewish historian Josephus, "live the same kind of life as those whom the Greeks call Pythagoreans. They are long-lived also, insomuch that many of them live above a hundred years by means of their simplicity of diet and the regular course of their lives."

It is said that in no part of the world (in proportion to its population) are there more instances of extreme longevity than among the Norwegian peasantry, who scarcely ever taste animal food. In the severe climate of Russia also, where the inhabitants live on a coarse vegetable diet, there are a great many instances of advanced age. The late returns of the Greek church population of the Russian empire give (in the table of the deaths of the male sex,) more than one thousand above one hundred years of age, many between one hundred and a hundred and forty, and four between one hundred and forty and one hundred and fifty. It is stated that to whatever age the Mexican Indians live, they never become grey-haired. They are represented as peaceable cultivators of the soil, subsisting constantly on vegetable food, often attaining a hundred years of age, yet still green and vigorous. Of the South American Indians, Ulloa says: "I myself have known several who, at the age of a hundred, were still very robust and active, which unquestionably must, in some measure, be attributed to the constant sameness and simplicity of their food." Both the Peruvian Indians and the Creoles are remarkably long-lived, and retain their faculties and vigor to a very advanced age. Slaves in the West Indies are recorded from one hundred and thirty to one hundred and fifty years of age.

We cannot bring the argument to a scientific demonstration unless we could compare vegetable feeders with the feeders on animal food, in regard to longevity, *with all the other circumstances the same.* Nevertheless, it is clear that eminent physiologists and able and im-

partial inquirers have been impressed with the belief that vegetable diet *tends* to longevity. Flesh-eaters—nay, intemperate eaters and drinkers—are sometimes long-lived; but we are justified in saying they would have lived *longer still* on a wiser diet.

RULES FOR LONG LIFE.

In brief, the requisites for longevity, may be secured

By a good physical organization.

By proper training; of the appetite; of the passions, especially by fatherly and motherly instruction at the age of puberty.

By regularity in all things; exercise, sleep, bathing, etc.

By avoiding excesses, bad habits, bad company.

By dismissing care and worryment. When the office closes leave all anxiety and business troubles in the safe. Business, at best, is but an experiment. Cultivate the habit of doing business cheerfully. Care ploughs deep furrows in the face.

By securing before advanced life an annuity.

By gentle recreation, agreeable companionship, and innocent amusement.

By avoiding cities. If you must do business in town, live in the suburbs.

By plenty of undisturbed sleep.

By plain and unadulterated food and pure water.

SUDDEN DEATH.

Most people have a dread of sudden death, and yet this is the death of old age and seems to be the most natural. Sitting in a chair, the head of the aged person falls forward upon the chest and the "light has gone out." The popular opinion prevails that sudden death is due to heart disease, but the facts do not warrant such conclusions, at least in the majority of cases. Post-mortem examinations are not as frequent in this country as in Europe, and it is from this source that we have the statistics of sixty-six cases of sudden death, in each one of which post-mortems were held. These exhibits show that of this number only three died of heart disease, nine

were of apoplexy, and forty-six of congestion of the lungs. In other words, the most frequent cause of sudden death is the filling of the air-cells of the lungs with blood or the water (serum) of the blood. Sometimes this can be remedied. In collapse, for instance, or great prostration, when it seems to be too late to give stimulants by the mouth or rectum and where death seems certain, inject alcohol or whisky under the skin by the hypodermic syringe. Instantly the heart feels the stimulus, the pulse comes up, the lungs are more active, heat returns to the surface, and the lusterless eyes gleam again with the light of life.

EVIDENCES OF DEATH.

We stated in the first pages of this volume that persons are often buried alive. The results of the researches instigated by the French government prove as much. In catalepsy, the pulse, the heart-beat, and the circulation of blood, are imperceptible. There are other conditions of the system which closely resemble death. Many tests have been devised, but we will mention but two which are commendable for their simplicity. One is to submit the finger or toe to the flame of a candle ; if a blister forms the person is alive, for this function is an evidence of a vital process. Another method is to wind a cord around the finger or toe an inch or two from its end. If the part beyond the ligature swells (congests), it is an evidence of the fact that the blood still circulates and hence that the person is still living.

PAINLESS DEATH.

We will close this part of the volume with a few extracts from the pen of Prof. A. Wilder.

“To grow old gracefully has been indicated to be one of the greatest moral achievements of a cultivated mind. It involves heroic qualities to part with youth, and whatever of beauty and enjoyment are associated with it, and adopt the costume of mature life—a furrowed countenance, a paler or duski-er complexion, thin and silvery hair, dimming sight and increased sensitiveness to the several agen-

cies which co-operate to pull down 'this earthly tabernacle.' We sadden almost imperceptibly ; the vivid zest of pleasure is superseded by the calmer enjoyment of repose ; our selfish propensities concentrate into avarice ; our retiring passions leave greater space for affections and the sober virtues.

"The terror of dying is perhaps the greatest which we suffer. We would gladly bargain with fate for any amount of privation and enduring torture to secure exemption from the necessity. We become gloomy at the thought or mention of the dreaded occurrence. A light word upon any topic related to it is regarded with a species of horror.

"Nevertheless, however sacred the instinct of life, it is the law of nature and in the providence of God, that we shall die. Every plant and animal that ever existed, however remotely in geological time, was born, lived and died, by divine law, inherent in all functional existence. The races of men are no exception. Accepting the event of death as ordered by the same law as that which caused our existence to begin, the motive that impelled the establishing of both conditions must be alike Godlike, and equally benevolent and beatific. It is best for us, most fortunate for us, that having properly accomplished our careers, we die.

"Sudden death, without premonition, now so common, is a boon rather than a hardship. If we have 'set our house in order,' attended to all persons and matters requiring our care, and have not inopportunely hurried our end, there is abundant reason to welcome such a conclusion. It seems to us a glorious thing to live our life out full, exhausting its powers without disease, and then cease to exist from the sudden stopping of the machinery. If destiny, which overrules our acts and purposes, has that end in store for us, we would in advance declare it the mode most agreeable.

"It is evident that persons liable to trance are likely to escape corporeal life painlessly, as a bird leaves a cage, or a traveler his inn. Persons sometimes die from having no desire or energy of will to live. The individual of healthy body who has avoided disease and unwholesome habits, goes to death as to a sleep, from which for once

he fails to awake. It is more like the insensibility from chloroform than a breaking up of the physical economy. The stroke of lightning, the blow of the ax, and the instantaneous crushing of the brain, end life at once, without a pang. The terror constitutes the entire suffering. Those who die in syncope, if they have any sensation, experience one that is rather pleasurable than otherwise.

"Most diseases remove the source of pain as they approach a mortal issue. The 'agonies of death' are but struggles or writhings, in which there is no suffering whatever. There are muscles which are moved or kept in quiescence by the influence of the will upon them. At the period of death, and sometimes on other occasions, this influence is withdrawn : upon which they quiver and exhibit appearances that unsophisticated spectators mistake for suffering. A bird with its head cut off struggles in the same manner. Those who die of fevers and most other diseases experience their greatest pain, as a general thing, hours, or even days, before they expire. The sensibility of the nervous system becomes gradually diminished, the pain is less acute under the same exciting cause ; and so far from being in their greatest distress when their friends imagine it, their disease is acting upon their nerves like an opiate. Many times, indeed, they are dead, so far as respects themselves, when the bystanders are more to be pitied because of the anguish which they endure from sympathy.

"If we look this matter of dying in the face, so to speak, as critically and calmly as we consider other topics, we can escape a world of apprehension, alarm and misery. We are perishing every moment, so far as the molecules of our bodies are concerned ; the textures are constantly giving way, and even oxygen, the vital air, takes the life from whatever it touches and sets it to decaying. Yet this never alarms ; the crisis or culmination is what we regard as the serious matter.

"There are three modes of dying, from *syncope*, *asphyxia* and *coma*. The latter is the suspension of the functions of sensibility, by operating on the brain. The long-continued action of cold, reacting like opium and chloroform, lesions of the brain as by fever

or apoplexy, occasions this condition. There is little or no sensation. Asphyxia, or suffocation, occurs from suspension of respiration, or the access of oxygen to the blood. At first the heart receives venous blood into its left side and transmits it over the body. This operates on the brain, suspending sensation : the medulla is paralyzed and with it the pneumogastric nerve ; the lungs refuse to transmit non-oxygenated blood, and the heart and other vessels cease action. Drowning, strangulation and poisonous gases produce this condition. Syncope proceeds from the interruption of the circulation of the blood and may occur through hemorrhage, weakness, or paralysis of the walls of the heart, as from the use of tobacco, or from injuries to the nervous system, as from concussion or shock, or from violent blows, lesions, violent mental emotions, a stroke of lightning, exposure to the sun, or from poisons.

“ Our purpose is to show that death generally occurs when we are asleep or unconscious, and so comes upon us insensibly, like repose upon a weary man. Nature strives to render us indifferent or desirous of the end. While life is really precious, she intensifies the desire to live ; but as its uses are accomplished, she makes us willing to leave. To the well-ordered mind it is evident that death is as fortunate an event for us as any that occurs.

“ As most of us do not accept the declaration of Winwood Reade and his fellow-philosophers, that “ the belief in immortality must die,” but instead look for a continuous existence, it must appear obvious to us that our mundane life is a kind of preparatory school for the next. It certainly is not well to hasten thither till we graduate ; yet when the time arrives there is every reason for passing to the next stage gladly and fearing nothing. By living morally and physiologically we shall escape the pain so much dreaded ; by considering the matter calmly and reasonably, we will annihilate the terror ; by faith in the loving and the right, we shall apprehend all the great facts and know that we pass from the good to that which is better.”

MEDICAL APPLIANCES:

NEW SPRING PAD TRUSS.

(TUCKER'S.)

A Perfect Appliance for the Relief of Hernia.

The "New Spring Pad Truss" has been devised for the purpose of giving permanent relief to all who are afflicted with abdominal hernia in any of its forms. It is a new and important invention for the relief of rupture, and if properly adjusted it will invariably retain the hernia, and give great comfort to the patient.



As compared with the old style body spring appliances, it is acknowledged by the most skilled surgeons in the country as being far superior.

The "New Spring Pad Truss" is held to its place securely by a belt of fine non-elastic webbing, and so completely and comfortably

is the hernia retained, that the wearer is in a short time unconscious of its presence.

We offer this appliance, confidently believing that it possesses points superior to any other. The main features to which we desire to call particular attention are:

First.—The fact that it absolutely holds the hernia with greater ease to the patient than any other.

Second.—Its ready and complete adjustability, by which each pad is made either right or left at once, and fixed at any desired angle.

Third.—The $\triangleright$ shaped spring, by which a constant but easy upward pressure is given to the pad when adjusted.

Fourth.—There is no body-spring to gall and rust; there are no elastic bands to wear out.

Fifth.—It is exceedingly durable, and is more economical at the price than the ordinary Spring Trusses would be at 50 cents each.

DIRECTIONS FOR APPLYING THE SINGLE TRUSS.—After placing the pad over the opening, see that the top plate is adjusted in a perpendicular position. This enables the belts to draw at right angles. The adjustment is made by loosening the large screw at the top and fixing the spur in the proper hole, then tighten the screw and adjust the belt.

For applying the Double Spring Pad Truss. The angle of the pad is determined by the small screw which passes from the connecting bar into the extension of the lower plate.

The distance between the pads is varied by removing the small screws in the connecting bar, and after loosening the large top screws the pads can be moved either up or down obliquely, which has the effect of increasing or lessening the spread of the pads. After tightening the large screws and fixing the angle of the pad by the small screws the truss is ready to be applied.

When in double hernia the openings are not on a line, it may be necessary to have one pad a little lower than the other. This is done by removing the small screw in the side to be lowered, and after

loosening the large top screw slide the pad down, then adjust the screws.

SPRINGS—Care should be taken that the springs should be of proper tension; no stronger than necessary to retain the rupture.

Extra springs are furnished at a nominal cost, and are easily changed by the patient.

BELTS.—The belts are of durable non-elastic webbing, those for single trusses being provided with one perineal strap, and those for double trusses with two.

Always apply the truss with broad part of pad *downward*.

PORTLAND RESPIRATORY BRACE—(PATENTED 1877.)
(To be suspended from above.)



Fig. 1. •

This brace is especially designed for the relief of those who are unable to lie down on account of difficulty of breathing, as in asthma; a grateful support in cases of spinal diseases; an indescribable relief to those oppressed for breath from heart or lung diseases, dropsy, etc.

It makes it possible for the physician to employ anodyne remedies, which are otherwise contraindicated by the difficult breathing in the horizontal position.



Fig. 2.

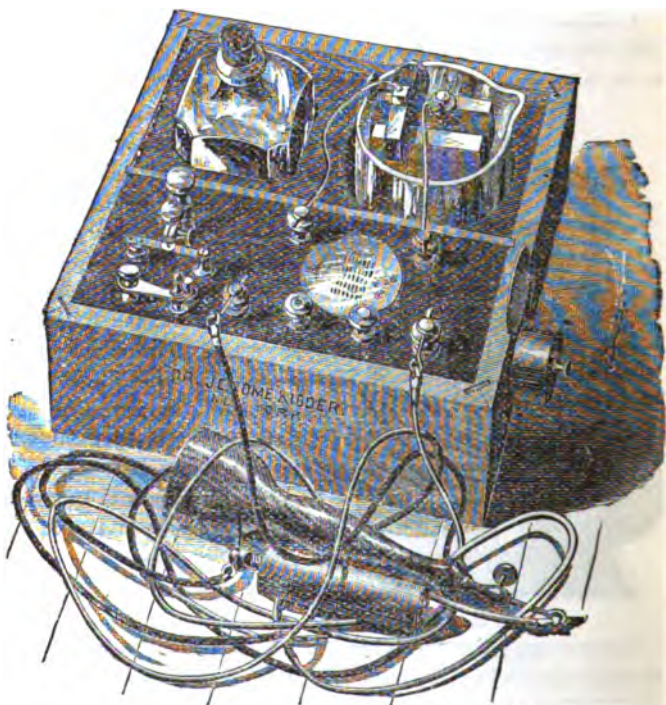
The brace enables the sufferer to sleep with perfect comfort in an upright position, and in an attitude most favorable for efficient respiration. It is indispensable to convalescents too weak as yet to support themselves, affording a refreshing change of posture, and counteracting stagnation of blood in the back of the lungs in cases of prolonged sickness; at the same time enabling the nurse to rub the patient's back or dress a bed-sore.

It is a great luxury to those who travel on the cars by night, and may be readily attached to the rack above the seats in ordinary railway cars.

DIRECTIONS.—In difficult breathing, as in asthma, the braces should be applied as in Fig. 1. The patient will breathe with much greater ease sitting up in a chair than in bed. A swivel-chair is preferable, and an inflated rubber chair cushion will be an indescribable comfort if the sitting be prolonged. For mere support to procure sleep, as when riding in the cars by night, or for an after-dinner nap, the elbows should be slipped into the loops, as in Fig. 2

ELECTRICAL MACHINES.

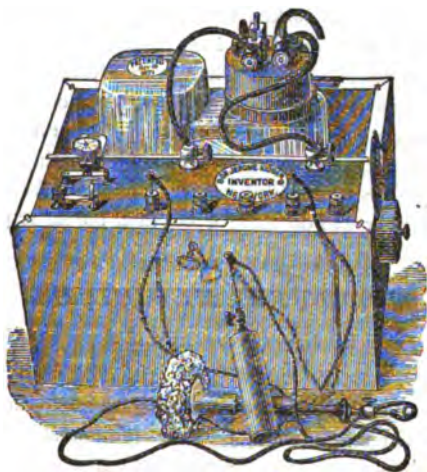
Electricity, as an adjunctive means of treatment, is very valuable. A physician's office is incomplete without a battery. Its value is only determined by *its proper use*. To simply request a patient to



OFFICE OR FAMILY MACHINE—TEN CURRENTS.

purchase and use a battery, without giving specific instructions for its employment, is a custom followed with doubtful results, if not actual harm. We do not, however, by any means consider it a

panacea; for, like other remedies, sometimes it succeeds admirably, and at others fails absolutely. It has its place and its sphere of usefulness, both of which will undoubtedly enlarge as the science of electro-therapeutics advances. The cases are few in which it can be solely relied upon, as in neuralgia, aphonia, menorrhagia, etc., but with proper medication its assistance may be called upon in all derangements of the nervous system, particularly in neuralgia, paralysis (except in brain lesions), exhaustion from overworked brain,



TIF BATTERY—ALWAYS READY FOR USE.

hysteria, chorea, and aphonia. Its tonic properties are worth employing in the treatment of amenorrhœa, dysmenorrhœa, menorrhagia, rheumatic headache, swollen joints, torpid liver and bowels, dyspepsia, incontinence of urine, and prolapsus of the womb. In such cases the descending current is advised. The negative pole is applied to the feet, and the positive current passes through the hand of the patient or the physician while stroking or rubbing the surface of the body above. The contrary, or ascending current, in which

the positive pole is applied to the feet, produces muscular contraction, and stimulates the nerves. This treatment is advantageous in local paralysis, stiff joints, and the like. In neuralgia, rheumatism, and paralytic affections, authors advise the alternation of the Faradic current and galvanization. In several instances, electricity has dispersed tumors. In all cases it must be used regularly, but for a short time at each sitting, and continued for several days and perhaps weeks.

Belts.—We are often asked our opinion of electric belts. From lack of personal experience, we have none to give. Patients report that they have used them, but where improvement occurred during their use, it was doubtful if it might not be traced to other causes. In many instances they failed completely. It is remarkable that no choice is made between an electrical machine, with its different currents, and possessing positive powers, and these belts. An hour's use of the former will do more good than the latter possibly could in a life time.

DOMESTIC MEDICINES.

This list comprises the simpler remedies and compounds heretofore mentioned, with a brief description of their properties and uses.

Cathartics.—The necessity of a remedy to move the bowels is too common, too apparent, and too generally understood to need comment. But it is not so simple a matter to find one that is unobjectionable. They are either unpleasant, uncertain in their action, purge violently, contain poisons, are painful, irritating, or otherwise so depressing as to leave a disagreeable feeling, coated tongue, etc., for several days following their use. We recommend magnesia (not that of the shops), but CALCINED MAGNESIA, that has been made, packed and sealed *in vacuo*. It is tasteless, has no grit, neutralizes acid conditions of the stomach and bowels, and in half-teaspoonful doses moves the bowels so gently that it is doubted if a cathartic action has taken place. In teaspoonful doses it is more active. We

administer in sweetened milk or water. Its action may be hastened by following with a glass of lemonade. In cases where the bowels are more torpid, or a more active remedy is desired, we prefer to use the **ANTI-BILIOUS PILLS**.

Diuretics.—These agents act upon the kidneys, and stimulating these organs, increase the flow of urine, and with it the escape of blood impurities. That this effect is often desirable will be inferred from the preceding pages, in which we have frequently repeated the **NITRE COMPOUND**. This recipe combines in a pleasant and palatable form the favorite diuretics of the three schools of medicine. It may be prepared without water, and thus kept for any length of time. Three parts of water may be added to one part of the mixture, and it is ready for use.

Expectorants.—The frequency of colds and coughs shows the necessity of a **COUGH SYRUP** as a domestic medicine. We employ the compound of lobelia, blood-root, tolu, etc., noticed on another page. The dose is a teaspoonful for an adult, which may be lessened according to age. Not only does this loosen the cough, but removes congestion of the lungs, and *any other derangement that may follow a slight cold*. It is valuable in hoarseness, wheezing, croup, influenza, and bronchial irritation. A tablespoonful is a relaxing emetic.

Alteratives.—A blood-purifier to be effective must tone up the stomach, so that digestion is improved, the bowels and absorbents, so that assimilation is perfected, and must so strengthen and call into activity the emunatories that all effete and impure matters are expelled. With good blood forming, and impurities continually escaping, we may expect in time the removal of constitutional taint, and the return of health and vigor. The composition of the **QUEEN'S ROOT ALTERATIVE COMPOUND** will readily suggest to the physician its varied uses. To others we may say that it is indispensable in scrofula, in scrofulous and specific diseases, and following acute attacks of erysipelas, eruptive diseases and fevers, in chronic skin disorders, glandular swellings, long standing rheumatism, etc.

Anti-malarial.—In several places in this work we have alluded to a pill to be used as a prophylactic to malaria; in other words, a remedy to be used by persons living in marshy, low, and malarious districts, or in localities affected with epidemics. See pages 245, 373, 489, and 494. It is much more in accordance with common sense to guard against chills and fever, ague, intermittent or remittent fevers, or even congestive and yellow fever—not to speak of neuralgia, enlarged liver and spleen—than to run the chances of resorting to the doubtful effects of the “pound of cure.” Travelers, tourists, yachtsmen, mariners, and the people generally, use them when they know of their existence. We should be very likely to hear of a case of failure; but so far have received no adverse report. The ANTI-MALARIAL PILL is recommended as a prophylactic only, or only in the earlier stages of attacks, during the first feelings of indisposition. It will be observed that it is gently cathartic, and during exposure it should be promptly employed to relieve constipation, however slight.

Revulsives.—A revulsive is an agent which calls the blood to the surface, and thus relieves internal parts or organs of congestion. A mustard plaster has this effect. Mustard should always be mixed with *cold* water. Hot water prevents the formation of the acid which irritates the skin. We seldom use the mustard flour alone, but mix with it one-third of ground ginger: its good effects are more lasting. Besides, blistering will destroy the good effects of the paste, and not unfrequently have an opposite effect to that intended. Indeed, it sometimes aggravates the local trouble. Never allow the paste to blister, but when the surface is well reddened, remove and reapply when the skin becomes pallid. With children we use the ginger only, dispensing with the mustard entirely. A more common form of revulsive is a liniment. The HARTSHORN LINIMENT, composed of sassafras and olive oils, hartshorn and camphor, is exceedingly valuable. It is recommended specially in quinsy, but may be rubbed on by the hand over any part where the skin is not broken to relieve internal pains, swellings, or inflammation.

Banumber.—The ACONITE LINIMENT has a still greater field of usefulness. It may be applied upon a flannel disk or pad to any part of the surface where the skin is *unbroken*, or not blistered, to relieve deep-seated pains, neuralgia, stitches, sprains, nerve irritation, etc. A distinction something like this may be made in the use of the two: The hartshorn liniment is indicated in cases of internal or local swelling; the aconite liniment in cases where the pain is sharp, shooting, and the swelling is absent.

Cholera Tincture.—This is the summer remedy for choleraic disorders. It is taken in a little water. It relieves cholera morbus promptly. Two or three doses of a teaspoonful in water, every four or six hours will stop diarrhoea.

Antacid Cordial or Compound.—This cordial, as elsewhere stated contains rhubarb, spearmint, etc. It has no cayenne, as in the cholera tincture. It is suited to all ages (except infants) and all constitutions. It should be employed in looseness of the bowels, diarrhoea, dysentery, heartburn, several forms of dyspepsia, headache from foul stomach, nausea, indigestion, flatulency, acid stomach, pregnancy and piles. The dose for an adult is a teaspoonful every one, two, or three hours, according to the urgency of the symptoms. It is frequently alluded to throughout this work.

Anti-spasmodic.—Brandy and whisky and cayenne pepper are the most common stimulants; but the CHLOROFORM AND LAVENDER COMPOUND is more prompt, and, we might say, more penetrating. It stops fits and convulsions at once. For years we have used this recipe, and never have had occasion to want another. It may be used in colic, dysmenorrhœa with or without the addition of gel-seminum.

Styptics are agents employed to stop hemorrhage or bleeding. They are not applicable to surgical injuries (see Wounds.) The fleabane and cinnamon are invaluable in nose bleed, bleeding from the lungs or stomach, in piles, bloody flux, flooding and menorrhagia.

Hypnotics and Anodynes are to produce sleep and relieve pain. For the former we employ the **HOP PILLS**, made of lupulin and gelsemin; for the latter, the **OPIMUM PILLS** or the **MORPHINE PILLS**. We seldom use the morphine, relying almost wholly upon opium. Both constipate, but the morphine is likely to disturb the stomach the next day. These are best in pill form, for the weight is accurate.

Ointments.—We have noticed but two kinds. The **WHITE OINTMENT**, or, as some call it, the **Salt-rheum Ointment**, is meant specially for skin diseases, granulated eyelids, sore eyes, and in dressing malignant wounds and ulcers.

The **ANTISEPTIC OINTMENT** has been frequently recommended, and a knowledge of its ingredients will demonstrate the wide range of its utility. It is anti-septic, and as it is now a matter settled beyond dispute that any open or denuded surface is besieged at once by myriads of animal and vegetable growths floating in the atmosphere, which poison the flesh and hasten decomposition, we stop this action at the outset. Hence, it can be applied with benefit to any cut, burn, scald, blister, sore or ulcer. It is waxy in nature and shields the flesh still further from the action of the air. It is oily, relieves the tension of the surface in inflammation, and is penetrating; hence its use in boils, felons, sore throat, swellings, sprains, overstrains. It is one of the most healing applications of which we are aware, and also contains an anodyne; hence its application to chapped lips and hands, piles, fistulæ, and, thoroughly rubbed upon the surface, will allay internal pains. It is almost inodorous. If it has any scent at all, it is of the most delicate and agreeable of all perfumes—that of the rose. Thoroughly rubbed in, the oily constituent will not mark the clothing; if by accident it should, it is easily and completely removed by washing.

Gelseminum.—This remedy is simply a relaxant. We use only tincture of the green root. Three drops is an average dose. Its uses have been pointed out in the foregoing pages.

Belladonna.—We prefer the English tincture. It is the remedy in

tendency to and congestion of the head, in scarlet fever, and in all disorders with a dry skin and throat, in coma and tendency to stupor. The dose is from ten to thirty drops in a tumbler of water, given in teaspoonful doses every hour. The solid extract we prefer in headache. It also makes a good plaster to relieve pain and surface congestion.

Veratrum.—We use the tincture of the green root only. This we consider one of the greatest remedies in the whole field of medicine. It is a heart regulator, and through it controls fevers and inflammations. The average dose is about three drops every two hours until the pulse falls to seventy, and then every three or four hours. Repeatedly have we advised it, and in several instances commented upon its therapeutical powers and properties. In an overdose it is a poison. The best way to give drop doses is in the following manner: Drop twenty-four drops into a tumbler, pouring from the bottle upon a cork and allowing the drops to fall from the cork. Into the same tumbler put eight teaspoonfuls of water. It is evident that we have eight doses of a teaspoonful each, holding three drops in solution. Invariably we add the essence of wintergreen, ten or fifteen drops, as a flavor and as a stimulant. It is the sheet anchor in pneumonia, fevers, erysipelas, puerperal convulsions, and to abort the inflammation following surgical injuries. For further views on this subject, the reader is referred to pages 232, 233 and 241.

Phosphorus and Nux Vomica Pills.—This is the remedy for the exhausted brain and nervous system, whether from severe mental labor, continued excitement, loss of memory, dizziness, paralysis, epilepsy, impotency, neuralgia, vital exhaustion, nervous headache or debilitating diseases resulting in loss of nerve force.

Composition Powders.—This is composed of bitter roots and herbs and cayenne pepper. It is an old and reliable remedy, and has been used in the form of tea, taken upon retiring, to break up a cold, threatened fever, etc.

Pepsin.—This is the active principle of the gastric juice, and will

digest food outside as well as in the stomach. It is a valuable help to the dyspeptic, will relieve indigestion, and cure some forms of diarrhœa.

PHARMACY.

The great majority of our vegetable extracts are not uniform and reliable in their quality and manufacture. Among other causes, from the following:

They are not collected at the right season of the year.

They are not properly cured.

There is a great difference in the strength and quality of the article, owing to differences in soil and climate where produced. The Western scull-cap is far superior to the Connecticut growth.

Using articles that have become inert or worthless through age or other causes.

Chemical changes by light, heat and the atmosphere.

Want of knowledge in their selection, manipulation and manufacture.

Vegetable remedies are easily adulterated.

The profession are unfortunately unable to tell the crude article one time in ten; think it too much trouble to prepare their own medicines, and are not sufficiently skilled to test those that they purchase and know that they are of proper quality and properly compounded. Patients lose their lives for want of this knowledge by their medical advisers. The result is, the physician is often disappointed in his prescriptions, and the patient loses confidence—even hope sometimes—if he does not suspect he is the subject of experiment.

A writer to the *Druggist* reports “the result of examinations of eighteen fluid extracts of Belladonna made by different manufacturers. They ranged from 410 to 80, or, in other words, the weakest preparation was but one-fifth the strength of the most active. Such facts are startling to practitioners. Doubtless similar uncertainty

prevails, though perhaps not to such an extent, in the whole range of pharmaca! preparations. A remedy for the evil is imperatively demanded. The responsibility and remedy rest with the pharmacists. The rapid progress of pharmaceutical science within a few years past, and the multiplication of associations and schools for its culture, ought to have debarred the possibility of results so embarrassing and disreputable. We are assured that fluid extracts are the most certain and uniform of medicinal preparations, and they are largely prescribed by physicians under this guarantee. We turn the subject over into the hands of our pharmacists for that attention and reform which are alike demanded by the magnitude of the subject in its relation to life and disease, and by their own reputation and their obligations to the community."

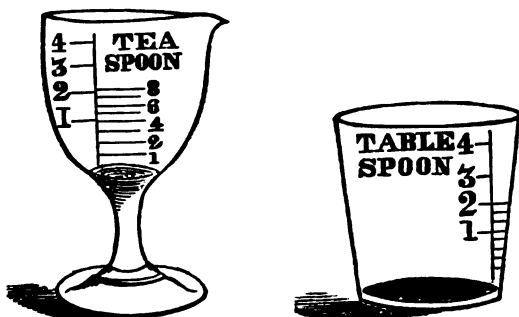
In another chapter we have given the results of a personal examination of some of the simpler drugs, magnesia, &c. But read what the American Pharmaceutical Association reports:

"Mr. C. B. Allair again calls attention to the great quantities of spurious 'American Dandelion' floating about. It is chicory. Every manufacturer has fluid ext. of dandelion on his list, but none apparently has any fluid ext. of chicory. Opium containing ten per cent. of earthy matter was sent to Prof. Attfield. Wild cherry largely adulterated with sassafras bark has been met with by Prof. Maisch. Mustard was found to vary all the way from mustard flavored with flour to flour flavored with mustard. Cardomons are mixed with orange seeds and unroasted coffee to the extent of four per cent. Fine large ergot is scarce; a great deal of small-sized ergot is imported into this country, consisting only in part of ergot of rye. Guaiac wood containing its proper proportion of resin seems to have almost disappeared from the market. Eleven samples were examined, and all except one were devoid of resin. The greatest adulteration is practised in powders, principally on account of the difficulty of detection. We have been informed that certain wholesale drug houses have rooms set apart for mixing powders," etc.

"If we ever expect to reduce the practice of medicine," says Mr. J. U. Lloyd, "to a science of facts, it is necessary to understand each disease and its antidote; and as the first step in this direction, it is absolutely necessary that physicians be supplied with medicines that are invariable and unchangeable. They cannot hope to practice with any degree of certainty or satisfaction while medicines of different strengths are upon the market, all purporting to be identical representations of the active principles of certain crude drugs; and just here is where pharmaceutical chemistry enters the field.

"Will the pharmacist always make a reliable pharmaceutical from the drugs the market is supplied with? Can he be expected to take the crude botanical specimens in the market and send from his laboratory medicines reliable and unvarying, each article representing the active principles of the prime crude drug? I think he cannot do so; and to introduce my proof, will ask my physician friends if they expect any amount of knowledge will enable mortal man to squeeze blood from a turnip? Let the pharmacist be ever so capable, he cannot take a pound of worthless crude drugs and produce a pint of prime fluid extract. He cannot work roots that have lain mouldering and rotting five or ten years in some botanical warehouse and obtain from them medicines that can be relied upon. He cannot use drugs half destroyed by worms and give physicians the counterpart of a medicine that was prepared from fresh, prime roots. There is reason in all things, and we could as reasonably ask the pharmacist to squeeze the turnip until it drips with vitalized blood, as to perform the afore-mentioned impossibilities.

The whole thing lies in a nut shell. The druggist and pharmacist make their preparations to *sell*, and the physician who manufactures his own medicines exercises that care in their selection and preparation necessary to *produce their appropriate and ultimate effects*. It is to the impurity and inertness of the materials furnished for prescriptions that much of the disappointment of physician and friends is attributable.



GRADUATED GLASSES.

REMEDIES AND APPLIANCES;
SUITABLE TO THE
DISEASES AND EMERGENCIES
OF THE FAMILY,
ALSO OF TOURISTS, TRAVELERS, EMIGRANTS, MARINERS AND
ALL REMOTE FROM PROFESSIONAL ASSISTANCE.

- | | |
|-----------------------------|---------------------------------------|
| 1. Antacid Cordial. | 14. Belladonna. |
| 2. Alcohol. | 15. Calcined Magnesia. |
| 3. Aconite Liniment. | 16. Gelseminum. |
| 4. Cough Syrup. | 17. Veratrum Viride. |
| 5. Cholera Tincture. | 18. Pepsin. |
| 6. Hartshorn Liniment. | 19. Styptic Oils (for bleeding.) |
| 7. Nitre Compound. | 20. Sulphate of Zinc (Emetic.) |
| 8. Queen's Root Alterative. | 21. Anti-bilious Pills. |
| 9. Antiseptic Ointment. | 22. Anti-malarial Pills. |
| 10. Chloroform-Lav. Comp. | 23. Hop (Lupulin) Pills. |
| 11. Tincture of Iron. | 24. Morphine Pills, $\frac{1}{8}$ gr. |
| 12. White Ointment. | 25. Opium Pills. |
| 13. Wintergreen Essence. | 26. Phosph. and Nux Pills. |

Adhesive Plaster, Atomizer, Boracic Lint, Cage Covers for Poisons, Family Syringe, Forceps, Graduated Glass, Medicine Spoon, Portable Turkish Bath and Rubber Bag.

PREScriptions.

THE publisher and author have received many letters from buyers of previous editions, inquiring about the list of remedies on the opposite page. To correct a popular mistake, we will say that, with but two exceptions, the recipes for each one of these will be found in different parts of the book. The prescription for the Antacid Cordial will be found on page 271 ; Aconite Liniment on page 307 ; Mat-rikonine on page 608 ; Cough Syrup on page 437. The Cholera Tincture is the first recipe on page 272, and the second on page 499 ; the Hartshorn Liniment on page 263 ; Nitre Compound on page 308 ; Queen's Root Alterative page 326.

The Antiseptic Ointment is made as follows :—

R.—Vaseline, . . . three ounces,
White Wax,
Spermaceti, of each, one-half ounce.

Melt together and while cooling add slowly one ounce of the saturated solution of Boric Acid and Glycerine.

The Chloroform and Lavender Compound is found on pages 243, 336 and 367.

The White Ointment is made as follows :—

R.—Prepared Lard,

Pure Olive Oil, . . . of each, two ounces,

White Wax,

Spermaceti, . . . of each, one ounce.

Mix, melt and strain. Add

Oxide of Zinc, . . . one-half ounce,

and if desired, Oil of Roses, . . . two drops,

and stir until cold.

The prescription for Styptic Oils can be seen on pages 406, 471 and 592 ; for phosphorus and nux pills, on page 370. These can be had already made of most druggists.

The Teething Syrup mentioned on page 416, is as follows :—

R.—Phosphate of Lime, . . . twenty grains,

Phosphate of Iron, . . . five grains,

Carbonate of Magnesia, . . . ten grains,

Simple Syrup, . . . three ounces.

Mix.

Give a half teaspoonful three or four times a day, and continue at intervals for several months.

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